Appendix E. Biological Assessment

BIOLOGICAL ASSESSMENT FOR THE PROPOSED CHEYENNE-MIRACLE MILE AND AULT-CHEYENNE TRANSMISSION LINE REBUILD PROJECT, CARBON, ALBANY, AND LARAMIE COUNTIES, WYOMING, AND WELD COUNTY, COLORADO

Prepared for

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U.S. Fish and Wildlife Service
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October 2006

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LIST OF ABBREVIATIONS AND ACRONYMS

AMSL	Above mean sea level
APLIC	Avian Power Line Interaction Committee
AU-CH	Ault to Cheyenne
BA	Biological assessment
BLM	Bureau of Land Management
CDOW	Colorado Division of Wildlife
C.F.R.	*Code of Federal Regulations*
CH-MM	Cheyenne to Miracle Mile
CIAA	Cumulative impact assessment area
Contractor	Construction contractor
CSU	Colorado State University
ESA	*Endangered Species Act*
FEMA	Federal Emergency Management Agency
kV	Kilovolt
MP	Milepost
mph	Miles per hour
MVA	Megavolt ampere
NESC	National Electrical Safety Code
ROW	Right-of-way
TEP&C	Threatened, endangered, proposed, and candidate
TRC Mariah	TRC Mariah Associates Inc.
U.S.C.	*United States Code*
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
WDEQ	Wyoming Department of Environmental Quality
Western	Western Area Power Administration
WGFD	Wyoming Game and Fish Department
WNDD	Wyoming Natural Diversity Database
WQD	Water Quality Division
WRCC	Western Regional Climate Center

1.0 INTRODUCTION

The U.S. Department of Energy, Western Area Power Administration (Western) proposes to rebuild and upgrade their existing 181-mile long 115-kilovolt (kV) Cheyenne to Miracle Mile (CH-MM) and Ault to Cheyenne (AU-CH) transmission line to a 230-kV transmission line system. The CH-MM and AU-CH transmission line runs from south-central Wyoming to northeastern Colorado (Figure 1.1). The proposed CH-MM and AU-CH transmission line project would rebuild and upgrade the existing transmission line and is designed to increase electrical transmission capacity and to increase system reliability.

The proposed CH-MM and AU-CH transmission line project would be composed of two segments. The first segment would be the 146-mile long CH-MM transmission line segment, which extends from the Miracle Mile Substation, located near the Seminoe Dam, approximately 30 miles northwest of Hanna, Wyoming, in north-central Carbon County, Wyoming, to the Cheyenne Substation, located immediately south of Cheyenne, Wyoming, in south-central Laramie County (Figure 1.1). The second segment is the 35-mile long AU-CH transmission line segment, and it extends from the Ault Substation located approximately 12 miles west of Fort Collins, Colorado, in northwestern Weld County to the Cheyenne Substation. The CH-MM transmission line segment crosses portions of Carbon, Albany, and Laramie Counties, Wyoming, and the AU-CH transmission line segment passes through portions of Laramie County, Wyoming, and Weld County, Colorado. Construction on the proposed CH-MM and AU-CH transmission line is expected to begin in 2007 and be completed in 2009.

Section 7 of the *Endangered Species Act* (ESA) as amended, 16 *United States Code* (U.S.C.) § 1531 et seq. requires all federal agencies, in consultation with the U.S. Fish and Wildlife Service (USFWS), to ensure that its actions are not likely to adversely affect or to jeopardize the continued existence of threatened, endangered, proposed, and candidate (TEP&C) species or to adversely modify their critical habitat.

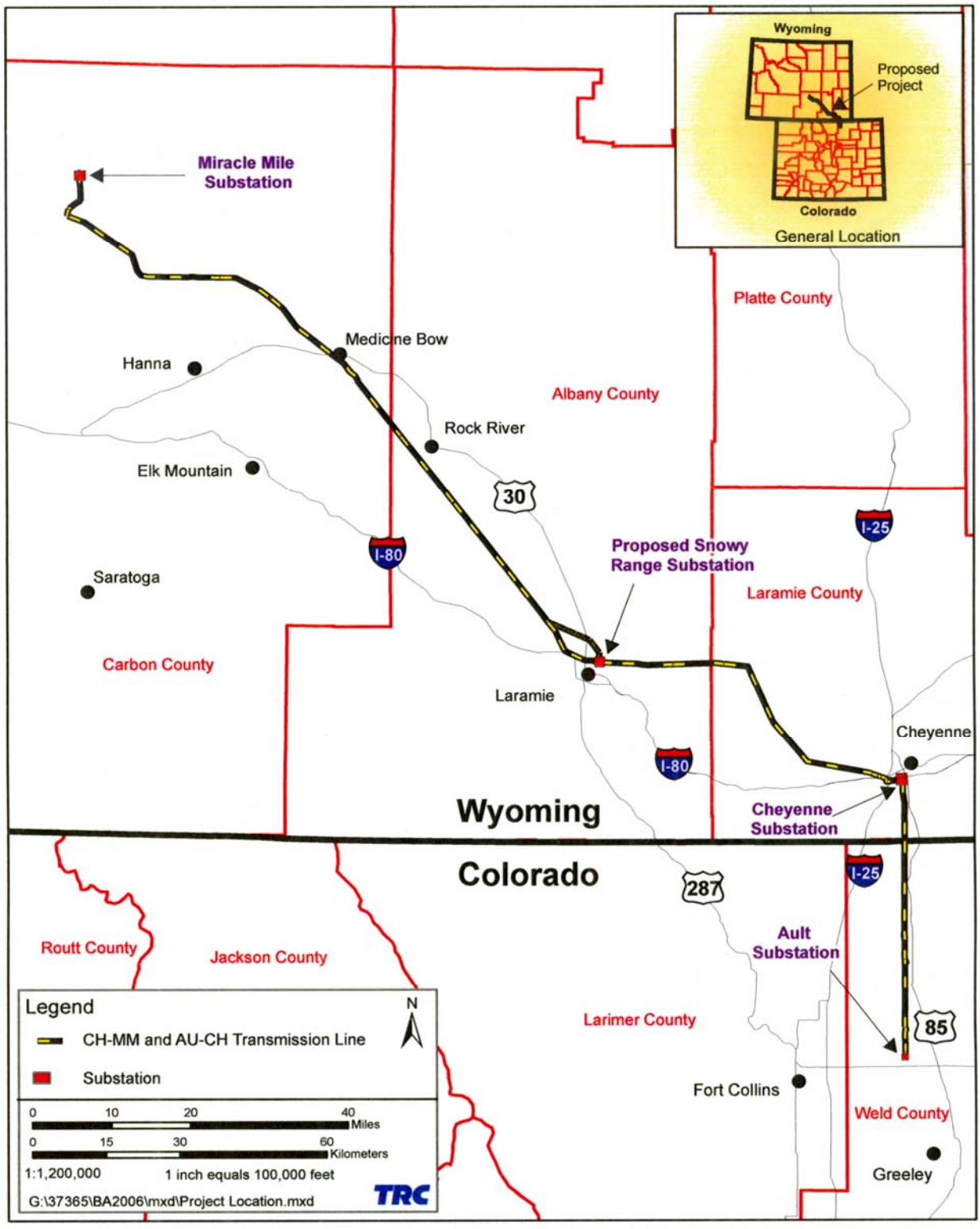

Figure 1.1 Location of Proposed CH-MM and AU-CH Transmission Line Project, Southeastern Wyoming and Northeastern Colorado.

TEP&C species are those that have been formally and specifically designated as such by the USFWS. Threatened species are those likely to become endangered in the foreseeable future throughout all or a significant portion of their range. Endangered species are those in danger of extinction throughout all or a significant portion of their range. Proposed species (proposed for listing as threatened or endangered) are those for which the USFWS has issued proposed rules in the Federal Register but for which a final listing decision has not been made. Candidate species are those for which the USFWS has sufficient data to list as threatened or endangered but for which proposed rules have not yet been issued.

Critical habitat for a threatened or endangered species includes 1) specific locations within the geographic area occupied by the species at the time it is listed, in accordance with the provisions of Section 4 of the ESA, and on which are found those physical or biological features (a) essential to the conservation of the species and (b) that may require special management considerations or protection and 2) specific areas outside the geographic area occupied by the species at the time it is listed, if determined by the Secretary (i.e., of the Interior, of Commerce, or of Agriculture) that such areas are essential for the conservation of the species. Designated critical habitats are described in 50 *Code of Federal Regulations* (C.F.R.) Parts 17 and 226. Critical habitat for several species identified in this biological assessment (BA) exists near the project area and are discussed for each appropriate species.

As part of the informal consultation process, this BA discusses the potential effects of the Proposed Action on federal TEP&C species or critical habitat occurring or potentially occurring on or adjacent to the project area. Analysis of effects of the proposed project on TEP&C species ensures compliance with provisions of the ESA and application regulations. This BA addresses the proposed CH-MM and AU-CH rebuild/upgrade project and associated components (e.g., access roads, substations) and has been prepared in accordance with the Endangered Species Consultation Handbook (USFWS 1998b) and satisfies the requirements of Section 7(c)(1) of the ESA and applicable regulations. This BA also addresses mountain plover and greater sage-grouse, two species of USFWS concern regarding population status, trends, and threats (USFWS 2006).

1.1 PROJECT DESCRIPTION

1.1.1 Transmission Line

For the proposed CH-MM transmission line segment, Western proposes to replace the original transmission line and structures with new 230-kV structures, including both wood H-frame structures and single pole steel structures (Figures 1.2 and 1.3). The original copper conductor would be replaced with a new aluminum conductor. Western proposes to install approximately 1,017 230-kV wood H-frame structures along 134.8 miles of the CH-MM transmission line segment from approximately 6.6 miles south of the Miracle Mile Substation to Cheyenne, Wyoming. Structures along the first 6.6 miles would not be replaced. Approximately 26 double-circuit single-pole steel structures would be installed along a 5.0-mile long segment through the city of Cheyenne to the Cheyenne Substation. As part of the proposed project, Western would also remove existing 115-kV structures and the conductor.

For the AU-CH transmission line segment, Western would install 230-kV/115-kV double-circuit single-pole steel structures (see Figure 1.3) for approximately 32 miles from the Cheyenne Substation south to approximately 3 miles north of the Ault Substation. From this point, Western would use the existing Archer-Ault 230-kV lattice structures and conductors to the Ault Substation. As part of the AU-CH rebuild project, Western would construct/install approximately 3 miles of new 115-kV transmission line on the east side of the Archer-Ault lattice structures. The 115-kV transmission line would be installed on wood H-frame structures (see Figure 1.2). For the AU-CH segment, Western anticipates constructing approximately 166 single-pole steel double-circuit 230-kV structures and approximately 24 wood H-frame 115-kV structures.

Transmission structures would typically be 52 to 115 ft tall and would be spaced 700-800 ft apart; however, the structure heights and spacing would vary depending on numerous design factors such as topography and the type of feature being spanned. All transmission structures and electrical components would be designed, constructed, operated, and maintained in

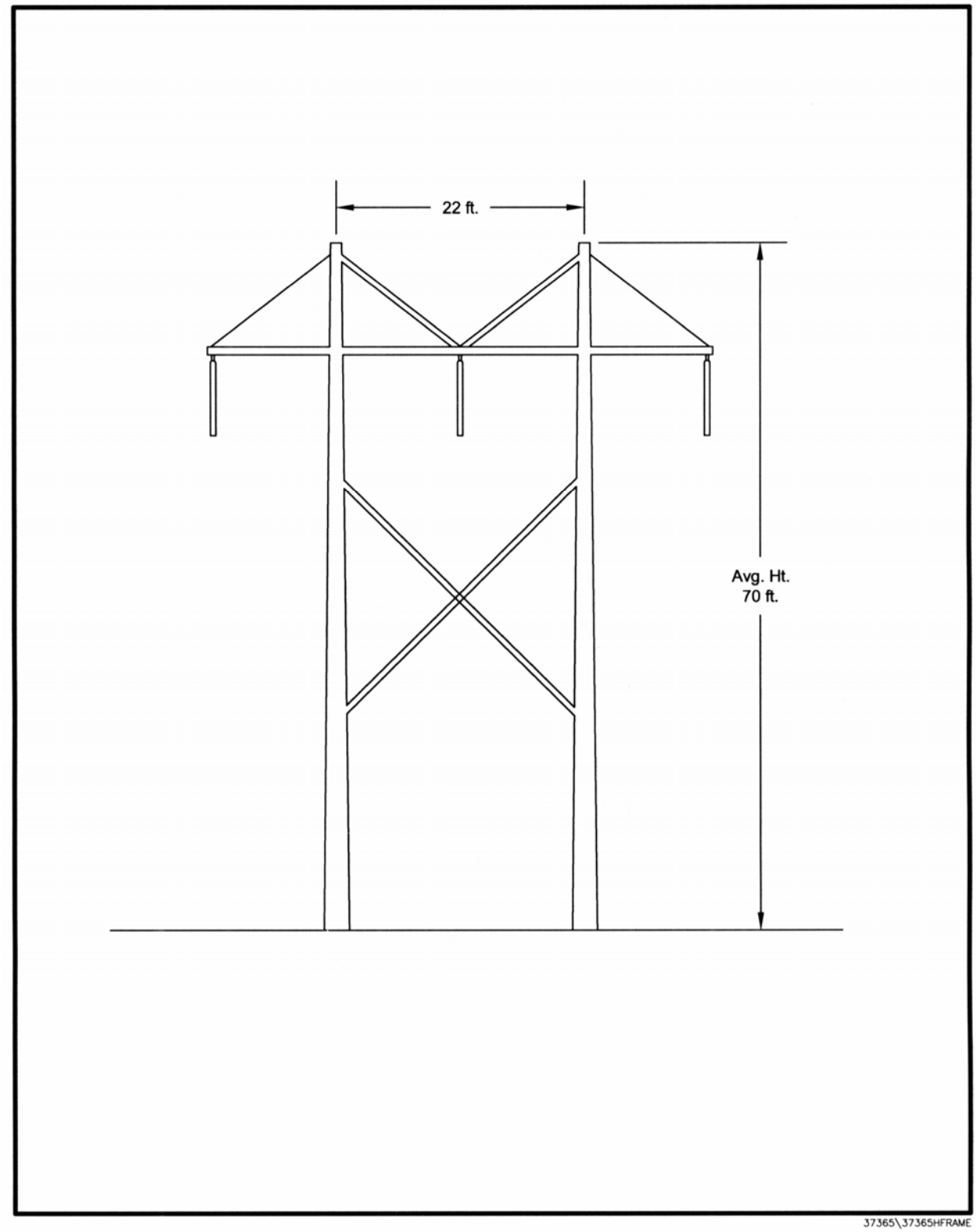

Figure 1.2 Proposed 230-kV Wood H-frame Structure, Proposed CH-MM and AU-CH Transmission Line Project, Southeastern Wyoming and Northeastern Colorado.

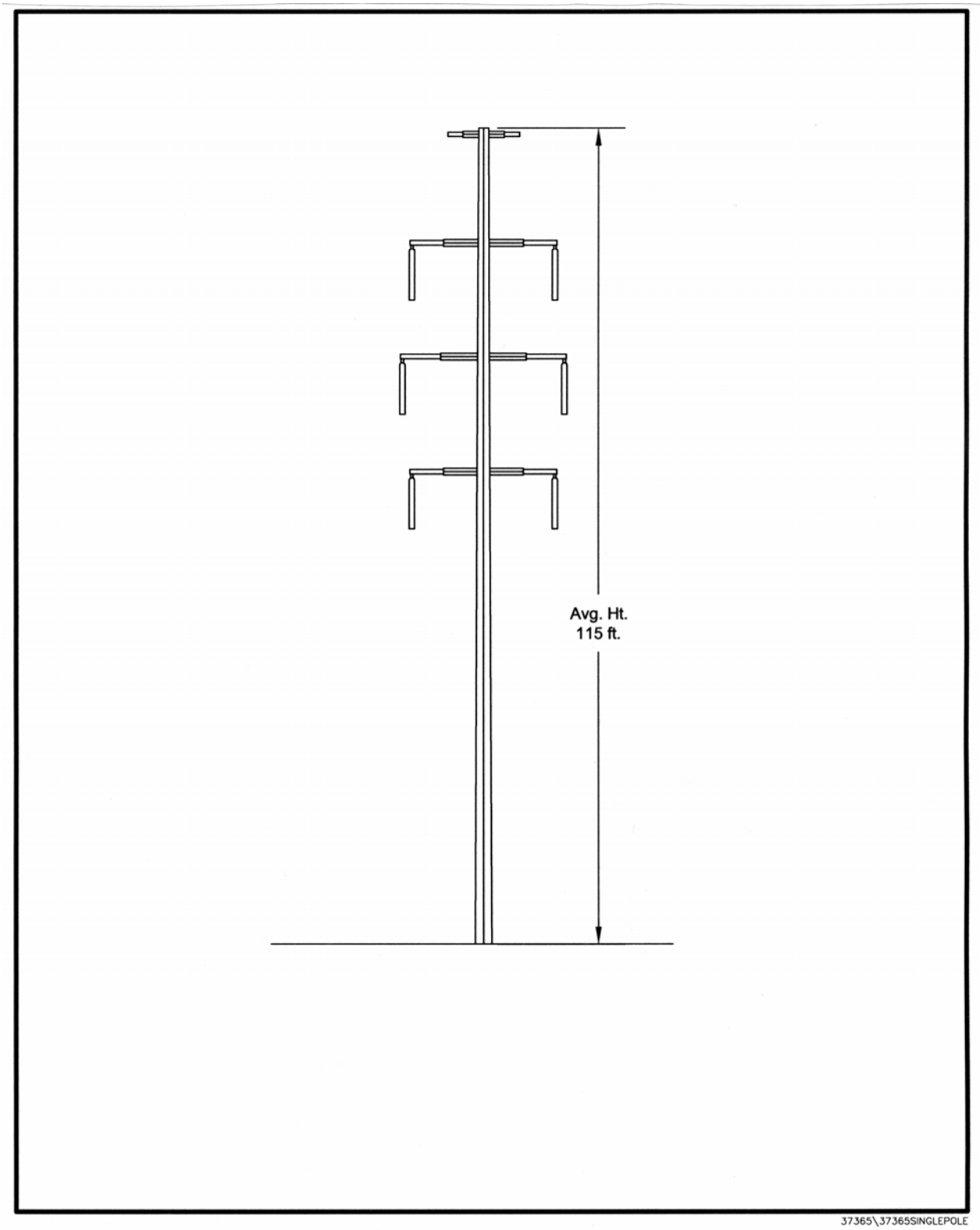

Figure 1.3 Proposed Double-Circuit 115/230-kV Single-Pole Structure, Proposed CH-MM and AU-CH Transmission Line Project, Southeastern Wyoming and Northeastern Colorado.

conformance with the National Electrical Safety Code (NESC) and other applicable codes and standards, as well as *Suggested Practices for Raptor Protection on Powerlines: The State of the Art in 1996* (Avian Power Line Interaction Committee [APLIC] 1996) and *Mitigating Bird Collisions with Power Lines: The State of the Art in 1994* (APLIC 1994).

1.1.2 Proposed Right-of-way Modifications

Rebuilding and upgrading the CH-MM and AU-CH transmission line would occur within Western's existing right-of-way (ROW), which crosses land owned by the federal government, state government, and private individuals or companies. The ROW varies in width, with the typical ROW being 70 to 75 ft wide. NESC sets standards for electrical clearances for safety and reliability purposes, and Western proposes to widen the existing CH-MM and AU-CH 115-kV ROW by 30-35 ft to a typical width of 105 ft for the proposed 230-kV transmission systems.

Additional ROW would be required along most of the project route. However, additional ROW would not be necessary along the following areas of the CH-MM rebuild segment: 1) the first 6.6 miles of the CH-MM transmission line segment where the existing line and lattice structures would be uprated and no new construction would occur and 2) the last 5 miles of Western's existing combined ROW for the CH-MM segment that are adequate for the proposed double-circuit 230/115-kV single-pole steel structures through the city of Cheyenne.

Western would acquire all additional ROWs necessary to meet NESC standards, and expanded and new easements would be acquired in accordance with applicable laws and regulations governing federal acquisition of property rights. These laws allow the payment of just compensation to landowners for the rights acquired, and every effort would be made to acquire access rights by direct purchase.

1.1.3 Access Roads

Access to the proposed transmission structure sites and construction areas would occur along Western's existing roads and/or by overland construction methods. Western currently maintains

access roads along the CH-MM and AU-CH transmission line, and these existing roads would continue to be used to construct and maintain the rebuilt/upgraded transmission line. Additional spur roads may be needed to access some new structure sites where vegetation and/or terrain conditions limit or restrict the movement of construction equipment and vehicles. These new access roads would be minor and would only be needed in areas characterized by rough terrain along the western part of the CH-MM segment. After construction is completed, access roads would be used on an occasional and periodic basis to access the transmission line for routine and emergency maintenance activities.

1.1.4 Establishment of the Material Staging Area

A total of 11 5-acre material staging areas (nine for the CH-MM segment and two for the AU-CH segment) would be established as necessary along the proposed ROW. These areas would serve as the mobilization and demobilization area for the project, a material storage area, an assembly area of small project components, and an equipment parking area. The construction contractor (contractor) would obtain legal access to these areas, and they would be marked in the field to delineate the boundary of the area. Since each area would be used only for material storage and equipment parking, available topsoil would not be salvaged prior to use. Following the completion of the construction phase of the project, the area would be reclaimed and revegetated in accordance with applicable procedures described in the project Plan of Development.

1.1.5 Proposed Substation Facilities and Modifications

The proposed project would include a new substation near Laramie, Wyoming, and modifications to the Miracle Mile, Cheyenne, and Ault Substations (see Figure 1.1). The proposed new Snowy Range Substation would allow sectionalization of other existing Western transmission lines in the immediate area. The existing lines have been tapped a number of times over the years to serve rural loads in south-central Wyoming, including the entire power requirements for the city of Laramie. The proposed 115/230-kV Snowy Range Substation would provide improved reliability to customers by decreasing line exposure during outage situations

and would be approximately 16 acres in size. Western is currently in the process of acquiring access rights for the Snowy Range Substation and the transmission line approaching the substation. Construction of the 115-kV facilities at the Snowy Range Substation would occur in 2007, followed by construction of 230-kV facilities in 2009.

Minor modifications would also be made to the existing Miracle Mile, Cheyenne, and Ault Substations to support the proposed 230-kV transmission voltage. All modifications to existing substations would occur within the existing fenced substation facilities. The Miracle Mile Substation modification would include two 230-kV line bays and one 200 megavolt ampere (MVA) 115/230-kV transformer. The Cheyenne Substation modifications would consist of a three-breaker 230-kV ring bus and one 200-MVA 115/230-kV transformer, and the Ault Substation would be modified by adding one 230-kV line bay.

1.1.6 Construction Practices

1.1.6.1 Construction Schedule

Western plans to construct the CH-MM and AU-CH transmission line project over a three-year period, starting in 2007. A list of proposed annual construction activities is presented in Table 1.1, and a summary of construction quantities and short-term and long-term disturbance associated with the proposed project is presented in Table 1.2.

1.1.6.2 Transmission Construction

Western anticipates that two to five crews of 5 to 6 persons would complete construction along the ROW. Sequential activities for project construction would entail site clearing and grading, hauling, pole excavation and replacement, framing, conductor stringing and tensioning, and pole disposal/cleanup.

Table 1.1 Proposed Construction Activity by Year, CH-MM and AU-CH Transmission Line Project.

Year	Construction Activity
2007	Construct Snowy Range Substation (115-kV facilities)
	Construct CH-MM transmission line segment between Miracle Mile Substation and Snowy Range Substation
2008	Construct CH-MM transmission line segment between Snowy Range Substation and Cheyenne Substation
2009	Make modifications to Miracle Mile Substation
	Make modifications to Cheyenne Substation
	Make modifications to Ault Substation
	Make modifications to Snowy Range Substation (230-kV facilities)
	Construct AU-CH transmission line

Table 1.2 Summary of Construction Activities and Short-term and Long-term Surface Disturbance, CH-MM and AU-CH Transmission Line Project.

Project Component	Quantity (Number of Structures)	Short-term Disturbance (Acres)	Long-term Disturbance (Acres)
CH-MM Segment			
H-frame structures	1,017	152.0	0.90
Single pole structure sites	26	3.9	0.02
Conductor stringing sites	56	56.0	N/A[1]
Staging Areas	9	40.0 (5 acres per each site)	N/A[1]
Removal of Existing H-frame structures	1,050	157.0	N/A[1]
New Access Roads	N/A[1]	N/A[1]	N/A[1]
Segment Total	N/A[1]	408.9	0.92
AU-CH Segment			
H-frame structure sites	24	3.6	0.02
Single pole structure sites	166	24.7	0.08
Conductor stringing sites	13	13.0	N/A
Staging Areas	2	10.0 (5 acres each site)	N/A
Removal of Existing H-frame structures	240	36.0	N/A
New Access Roads	N/A[1]	N/A[1]	N/A[1]
Segment Total	445	87.3	0.10
Project Total		496.2	1.02

[1] N/A = not applicable.

1.1.6.3 Site Clearing and Grading

Standard construction procedures for transmission lines require the removal of trees and vegetation that would limit the movement of vehicles and equipment within the ROW. Based on initial construction plans, Western expects that restrictive vegetation from an area of approximately 105 by 105 ft (0.25 acre per site) would be cleared for each transmission structure site, most of which has already been cleared from the existing ROW. Additionally, some leveling of the ground surface may be needed to assure safe operation of equipment and would be limited to specific structure sites and would be minimized as much as practical. Upon completion of construction operations, disturbed areas would be scarified and left in a condition that would facilitate natural revegetation, provide for proper drainage, and prevent erosion.

1.1.6.4 Structure Excavation and Replacement

Holes would be augured into the ground for the placement of new transmission structures, and no blasting would be required. Approximately 10% of each structure would be placed underground (i.e., a 70-ft tall structure would have approximately 7-ft buried below ground). Erection crews would assemble new structures within the ROW, and crews would position structures into the augured holes using cranes. Dirt from the holes would be used to back fill around the new structures, and excess dirt would be scattered adjacent to the structure and leveled with existing topography. Existing structures would then be pulled from the ground and left in the ROW until they are removed for proper disposal.

1.1.6.5 Conductor Stringing and Tensioning

At specific stringing sites, special equipment would be set up to remove the old conductors and to pull in new ones. The conductors would then be tensioned to a safe point above ground level, so that they do not become too taut during cold temperatures or high wind conditions.

1.1.6.6 Structure Disposal/Cleanup

Old transmission structures would be removed and recycled and/or disposed per existing regulations. All associated hardware, including guying, guy rods, insulators, and conductor and overhead groundwire, would also be re-used, recycled, or disposed of as appropriate. If requested by landowners, the old poles may be provided to landowners for their use. Old transmission structures would become the property of the contractor, who would be responsible for their proper disposal. Western would clean up and restore the ROW to preconstruction condition, to the extent possible.

1.1.7 Operation and Maintenance Practices

Electrical power system dispatchers at Western's Rocky Mountain Region, Power Marketing Operations Center would continue directing routine daily operation of the CH-MM and AU-CH transmission line. The dispatchers would use communication facilities to operate circuit breakers, which control the transfer of power through the lines. Because they operate automatically, the circuit breakers ensure safety in the event of a structure or conductor failure. Currently, aerial patrols of the line are conducted two or three times each year and ground patrols are completed once a year, as weather permits. These patrols would continue as part of Western's routine maintenance program. Climbing inspections would also be conducted, with each structure being climbed and inspected every five years after construction, following current maintenance procedures. In emergencies, prompt crew movement would be necessary to rapidly repair or replace damaged equipment.

1.1.8 Project Decommissioning Practices

At the end of the transmission line's useful life (estimated at 50 to 60 years) or if the line is no longer required, the line and structures would be dismantled and removed from the ROW. Site specific reclamation activities would then restore disturbed areas to as near preconstruction conditions as practicable.

1.1.9 Mitigation Measures

Western has adopted standard construction, operation, and maintenance practices that would avoid and minimize impacts to the environment to the extent practicable. These measures are listed on Table 1.3 and include Western's Standard Construction and Mitigation Practices, as well as special measures to be implemented for this project. In addition, Western would implement *Western's Integrated Vegetation Management Environmental Guidance Manual* (1999) and the Bureau of Land Management's (BLM's) Best Management Practices (1990). These measures would be used to control and re-establish vegetation within the ROW and at substation sites. Any references to mitigation measures presented in this BA apply to Western, as well as to its contractor.

Table 1.3 Proposed Project Construction and Mitigation Measures, CH-MM and AU-CH Transmission Line Project.

Western's Standard Construction and Mitigation Practices[1]

1. The contractor shall limit the movement of crews and equipment to the ROW, including access routes. The contractor shall limit movement on the ROW to minimize damage to residential yards, grazing land, crops, orchards, and property and shall avoid marring the lands. The contractor shall coordinate with the landowners to avoid impacting the normal function of irrigation devices during project construction and operation.

2. When weather and ground conditions permit, the contractor shall obliterate all construction-caused deep ruts that are hazardous to farming operations and to movement of equipment. Such ruts shall be leveled, filled and graded, or otherwise eliminated in an approved manner. Ruts, scars, and compacted soils in hay meadows, alfalfa fields, pastures, and cultivated productive lands shall have the soil loosened and leveled by scarifying, harrowing, discing, or other approved methods. Damage to ditches, tile drains, terraces, roads, and other features of the land shall be corrected. At the end of each construction season and before final acceptance of the work in these agricultural areas, all ruts shall be obliterated, and all trails and areas that are hard-packed as a result of construction operations shall be loosened and leveled. The land and facilities shall be restored as nearly as practicable to the original condition.

3. Water turnoff bars or small terraces shall be constructed across all ROW trails on hillsides to prevent water erosion and to facilitate natural revegetation on the trails.

Table 1.3 (Continued)

4. The contractor shall comply with all federal, state, and local environmental laws, orders, and regulations. Prior to construction, all supervisory construction personnel will be instructed on the protection of cultural and ecological resources. To assist in this effort, the construction contract will address a) federal and state laws regarding antiquities and plants and wildlife, including collection and removal and b) the importance of these resources and the purpose and necessity of protecting them.

5. The contractor shall exercise care to preserve the natural landscape and shall conduct his construction operations so as to prevent any unnecessary destruction, scarring, or defacing of the natural surroundings in the vicinity of the work. Except where clearing is required for permanent works, approved construction roads, or excavation operations, vegetation shall be preserved and shall be protected from damage by the contractor's construction operations and equipment.

6. On completion of the work, all work areas except access trails shall be scarified or left in a condition that will facilitate natural revegetation, provide for proper drainage, and prevent erosion. All destruction, scarring, damage, or defacing of the landscape resulting from the contractor's operations shall be repaired by the contractor.

7. Construction trails not required for maintenance access shall be restored to the original contour and made impassable to vehicular traffic. The surfaces of such construction trails shall be scarified as needed to provide a condition that will facilitate natural revegetation, provide for proper drainage, and prevent erosion.

8. Construction staging areas shall be located and arranged in a manner to preserve trees and vegetation to the maximum practicable extent. On abandonment, all storage and construction materials and debris shall be removed from the site. The area shall be regraded, as required, so that all surfaces drain naturally, blend with the natural terrain, and are left in a condition that will facilitate natural revegetation, provide for proper drainage, and prevent erosion.

9. Borrow pits shall be so excavated that water will not collect and stand therein. Before being abandoned, the sides of borrow pits shall be brought to stable slopes, with slope intersections shaped to carry the natural contour of adjacent, undisturbed terrain into the pit or borrow area, giving a natural appearance. Waste piles shall be shaped to provide a natural appearance.

10. Construction activities shall be performed by methods that prevent entrance or accidental spillage of solid matter, contaminants, debris, and other objectionable pollutants and wastes into flowing streams or dry water courses, lakes, and underground water sources. A buffer zone of 500 ft from live waters and wetlands and 75 ft from ephemeral channels will be established in areas where staging, stockpiling, and refueling occur. Such pollutants and wastes include, but are not restricted to, refuse, garbage, cement, concrete, sanitary waste, industrial waste, radioactive substances, oil and other petroleum products, aggregate processing tailings, mineral salts, and thermal pollution.

Table 1.3 (Continued)

11. Dewatering work for structure foundations or earthwork operations adjacent to, or encroaching on, streams or water courses will not be performed without prior approval from appropriate state agencies. A buffer zone of 500 ft from live waters and wetlands and 75 ft from ephemeral channels will be established in areas where staging, stockpiling, and refueling occur.

12. Excavated material or other construction materials shall not be stockpiled or deposited near or on stream banks, lake shorelines, or other water course perimeters where they can be washed away by high water or storm runoff or can in any way encroach upon the actual water source itself. A buffer zone of 500 ft from live waters and wetlands and 75 ft from ephemeral channels will be established in areas where staging, stockpiling, and refueling occur.

13. Waste waters from construction operations shall not enter streams, water courses, or other surface waters without use of such turbidity control methods as settling ponds, gravel-filter entrapment dikes, approved flocculating processes that are not harmful to fish, recirculation systems for washing of aggregates, or other approved methods. Any such waste waters discharged into surface waters shall be essentially free to settleable material. Settleable material is defined as that material that will settle from the water by gravity during a 1-hour quiescent period.

14. The contractor shall utilize such practicable methods and devices as are reasonably available to control, prevent, and otherwise minimize atmospheric emissions or discharges of air contaminants

15. Equipment and vehicles that show excessive emissions of exhaust gases due to poor engine adjustments, or other inefficient operating conditions, shall not be operated until corrective repairs or adjustments are made.

16. Burning or burying of waste materials on the ROW or at the construction site will not be allowed. The contractor shall remove all waste materials from the construction area. All materials resulting from the contractor's clearing operations shall be removed from the ROW.

17. The contractor shall make all necessary provisions in conformance with safety requirements for maintaining the flow of public traffic and shall conduct his construction operations so as to offer the least possible obstruction and inconvenience to public traffic.

18. Western will apply necessary mitigation to eliminate problems of induced currents and voltages onto conductive objects sharing a ROW to the mutual satisfaction of the parties involved. Western will install fence grounds on all fences that cross or are parallel to the proposed line.

Table 1.3 (Continued)

19. The contractor will span riparian areas located along the ROW and avoid physical disturbance to riparian vegetation. Equipment and vehicles will not cross riparian areas on the ROW during construction and operation activities. A buffer zone of 500 ft from live waters and wetlands and 75 ft from ephemeral channels will be established in areas where staging, stockpiling, and refueling occur. Existing bridges or fords will be used to access the ROW on either side of riparian areas.

20. ROW will be purchased at fair market value and payment will be made of full value for crop damages or other property damage during construction or maintenance.

Western's Project-Specific Measures for the CH-MM and AU-CH Transmission Line Rebuild Project

21. On the CH-MM portion of the project, construction would not occur within pronghorn, mule deer, or elk crucial winter range between November 15 and April 30 on all public and private lands unless an exception is granted by the BLM. Western would also avoid construction in greater sage-grouse nesting habitat during the nesting season.

22. Until Preble's meadow jumping mouse is delisted, Western would conduct an inventory prior to construction to determine if any existing structures occur in potential Preble's habitat; these structures would be cut off at ground level to avoid disturbing Preble's habitat.

23. Western would survey all areas to be disturbed and possible trafficways for Ute ladies'-tresses during the appropriate time of year when the orchid is in flower and, if any are found, would consult with the USFWS to determine what actions are necessary to avoid or minimize impacts to Ute ladies'-tresses. During operations, traffic in potential Ute ladies'-tresses habitat would be restricted to existing roads.

24. Western would minimize the introduction and/or spread of weeds by washing all equipment at a commercial facility prior to the start of construction each year, by avoiding vehicle traffic in known weedy areas, and by rewashing equipment if weeds are encountered. Western would reclaim all disturbed areas as soon as practical after construction each year and would implement a weed control program (in consultation with the BLM and private landowners) if the project causes the spread of weeds.

25. On the AU-CH portion, Western would avoid construction in pronghorn winter ranges during critical winter periods, to be determined in consultation with the Colorado Division of Wildlife (CDOW) prior to construction each year.

26. Western would span all 3.5 mi of known Colorado butterflyplant habitat along the ROW and would limit traffic to existing roads. Operations traffic in known or potential Colorado butterflyplant habitat would also be restricted to existing roads.

Table 1.3 (Continued)

27. If construction in floodplains and wetlands were to cause soil compaction or ruts, long-term impacts to wetland vegetation could occur. To avoid this impact, Western would limit construction in floodplains and wetlands to periods when soils are dry or frozen and/or use measures to support construction equipment (e.g., oversized treads on equipment, tracked equipment, matting) to avoid compacting soils and creating ruts. A buffer zone of 500 ft from live waters and wetlands and 75 ft from ephemeral channels would be established in areas where staging, stockpiling, and refueling occur.

28. If construction is to occur in potential mountain plover habitat during the breeding and nesting season, Western would survey potential habitat for the presence/absence of mountain plover nests and would avoid construction within 0.25 mile of nest sites until 37 days after the nest is discovered or 7 days post-hatching.

29. Removal of the existing wooden transmission line structures on eligible cultural sites shall be accomplished by cutting the structures at ground surface, thus requiring no additional excavation of the surrounding area. The structures shall be accessed using rubber-tire vehicles to minimize other associated impacts to the site. All structure removals shall be monitored by a permitted archaeologist. This measure applies to four structures listed below and will minimize adverse effects caused by structure removal as much as possible.

Site Number	Site Type	Owner	Structure to be Removed
5WL2622	Historic homestead	Private	58-4
5WL4830	Prehistoric tipi rings	Private	57-2
48AB1405	Prehistoric	Private	71-4
48CR8033	Prehistoric	Private	27-2

30. Impacts to eligible cultural sites caused by construction of new towers shall be minimized by planning. Whenever possible, transmission structures will be planned outside of site boundaries. In cases where avoidance is not possible, a mitigation plan will be formulated. If new structures are planned within 150 feet of a site, an archaeological monitor will be present to ensure that the site is not impacted during structure construction.

31. Heavy trucks and other equipment should not cross eligible sites when unimproved access roads are wet. Upgrading or maintenance of access roads within the boundaries of eligible cultural sites should be avoided wherever possible. Where avoidance is not possible, a mitigation plan should be prepared and implemented prior to any construction or roadwork. The plan should include mitigation of adverse effects. These guidelines apply not only to roads surveyed as project access roads but also to roads beneath the transmission lines that were subsumed in the transmission line survey.

Table 1.3 (Continued)

32. The contractor shall receive instructions from Western regarding the potential presence of fossils in pole excavations and in areas excavated or disturbed for roadwork. The contractor will be notified of his obligation to report any suspected paleontologic finds to Western. Western will retain a paleontologist to assess the significance of the paleontological finds and make recommendations. The BLM maintains staff paleontologists to perform assessments of discoveries on lands managed by them.

33. Western would design and construct the transmission line in conformance with *Suggested Practices for Protection of Raptors on Powerlines: the State of the Art in 1996* (Avian Power Line Interaction Committee 1996) to eliminate the potential for raptor electrocution. Western would install bird flight diverters at the Rock Creek crossing on both the rebuilt CH-MM transmission line and the existing Happy Jack-Miracle Mile (HJ-MM) transmission line to mitigate the potential for future raptor collisions at the Rock Creek crossing.

34. The 230-kV single pole steel structures proposed along CH-MM Section 5 and AU-CH Section 1 and Section 2 will be a neutral non-reflective steel material. Non-reflective and compatibly toned conductors and insulators will also be used in urban settings. Corten steel is not recommended in these settings due to the strong contrasts that the darker steel tone would create in these open settings.

35. In the event any threatened, endangered, candidate, or proposed species are found during construction of the proposed CH-MM and AU-CH transmission line, project-specific surface disturbance shall be halted and the USFWS will be notified immediately. Section 7 consultation between Western and USFWS will be re-initiated prior to restarting construction activities in the specific area.

36. To minimize impacts to nesting bald eagles, Western will conduct surveys prior to the initiation of construction-related activities within 1.0 mi of the construction corridor. No construction-related activities shall occur within 1.0 mi of any active bald eagle nest from February 1 though July 31. If the nest is determined to be active, Western will immediately notify the USFWS and a raptor mitigation plan will be developed and implemented with the concurrence of the USFWS, the BLM, and the Wyoming Game and Fish Department (WGFD).

37. Only those trees, tree tops, and limbs that are deemed to pose a hazard to operation and maintenance of the powerline will be removed. Western would minimize tree clearing, topping, and limb clearing, and these activities would only occur within the authorized ROW.

[1] Source: Western Area Power Administration (2004).

2.0 SPECIES EVALUATIONS

2.1 INTRODUCTION

This chapter presents a general description of the proposed transmission line corridor, information on relevant TEP&C species and critical habitats in the area, and the determination of likely effects after successful implementation of the mitigation measures presented in Section 1.1.9. This chapter also addresses cumulative effects or determines the degree (if any) to which the proposed project would contribute to additive direct and indirect effects from other ongoing or reasonably foreseeable activities. Projects not related to the proposed project that occur during the same time period and affect the same resources as the proposed project are included in the assessment of cumulative effects. Future federal activities are identified in this BA but are not specifically assessed in the cumulative effects analysis because a separate BA would be completed to assess the direct, indirect, and cumulative effects of specific future federal projects on TEP&C species. As directed in USFWS *Endangered Species Consultation Handbook* (1998b), alternatives to the proposed project are not addressed in this BA but are included and addressed in the environmental assessment prepared by Western and the BLM.

For the purpose of the cumulative impacts analysis portion of this document, the cumulative impact assessment area (CIAA) includes the proposed ROW and a 2-mile buffer on either side of the centerline of the proposed ROW.

Based on information obtained from the USFWS (2005, 2006), the species in both Wyoming and Colorado to be addressed in this BA are presented in Table 2.1. Based on the results of the analysis of effects presented in this chapter, a summary of the likely adverse effects of the Proposed Action on TEP&C species is presented in Table 2.2.

Table 2.1 Federal Threatened, Endangered, Proposed, and Candidate Species and Their Potential Occurrence on the CH-MM and AU-CH Transmission Line Project Area.[1]

Common Name	Scientific Name	Federal Status [2]	Potential State Occurrence [3]	Potential Occurrence Within the Immediate Project Area [4]
MAMMALS				
Black-footed ferret	*Mustela nigripes*	E, XN	WY/CO	R
Preble's meadow jumping mouse	*Zapus hudsonius preblei*	T	WY/CO	O
BIRDS				
Bald eagle [5]	*Haliaeetus leucocephalus*	T Proposed for delisting	WY/CO	O
Mexican spotted owl	*Strix occidentalis lucida*	T	CO	N
AMPHIBIANS				
Wyoming toad	*Bufo baxteri*	E	WY	N
PLANTS				
Blowout penstemon	*Penstemon haydenii*	E	WY	X
Ute ladies'-tresses	*Spiranthes diluvialis*	T	WY/CO	O
Colorado butterflyplant	*Gaura neomexicana* ssp. *Coloradenssis*	T	WY/CO	O
PLATTE RIVER SPECIES				
Piping plover	*Charadrius melodus*	T	N/A	CR
Interior least tern	*Sterna antillarum*	E	N/A	CR
Whooping crane	*Grus americana*	E	N/A	CR
Pallid sturgeon	*Scaphirhynchus albus*	E	N/A	CR
Western prairie fringed orchid	*Platanthera praeclara*	T	N/A	CR

[1] Adapted from USFWS (2005, 2006).

[2] Federal status (USFWS 2006):
E = listed as federally endangered.
T = listed as federally threatened.
XN = experimental/nonessential

[3] N/A = not applicable.

[4] Species occurrence:
CR = not present in project area but occur downstream of the project area with the Platte River system.
N = no evidence that the species occur in the general project area.
O = occasional; this species may occur in the project area during certain times of the year and may be locally common when suitable food is available.
R = rare; species may be in the project area for just a few days or hours (e.g., stopping over during migration), or the species has only occasionally or rarely been sighted in the project area. Encounters during project development and operation are very unlikely.
X = unlikely; there has been no recent historical record of the species occurrence in the project area; probability of encountering the species during project development and operation is very unlikely.

[5] Proposed for removal from federal listing.

Table 2.2 Summary of Likely Effects on Federal Threatened, Endangered, Proposed, and Candidate Species.

Common Name	Likely Effects on the Species and Critical Habitats of the Proposed Action
MAMMALS	
Black-footed ferret	No effect
Preble's meadow jumping mouse	May affect but is not likely to adversely affect and would not adversely modify critical habitat
BIRDS	
Bald Eagle	May affect but is not likely to adversely affect
Mexican spotted owl	No effect
AMPHIBIANS	
Wyoming toad	No effect
PLANTS	
Blowout penstemon	No effect
Ute ladies'-tresses	No effect
Colorado butterflyplant	No effect and would not modify critical habitat
PLATTE RIVER SPECIES	Consultation to be completed at a later date

2.2 DESCRIPTION OF THE GENERAL PROJECT AREA

2.2.1 Physiography

Physiographically, the CH-MM and AU-CH transmission line is located in the Hanna Basin, Laramie Basin, Laramie Mountains, and Denver Basin of southeastern Wyoming and the western side of the Denver Basin of northeastern Colorado (Knight 1994). Elevations along the proposed route vary between 8,500 ft above mean sea level (AMSL) and 5,100 ft AMSL. Starting at the northwestern portion of the proposed transmission line, the Miracle Mile Substation located in north-central Carbon County, Wyoming, has an elevation of approximately 6,000 ft AMSL. From this point, the elevation along the route varies between 6,000 and 7,400 ft AMSL from Miracle Mile Substation to the Snowy Range Substation in Albany County. The line then climbs over the Laramie Mountains and reaches a maximum elevation of 8,500 ft AMSL and then gradually decreases until it reaches an elevation of approximately 6,000 ft AMSL near the Cheyenne Substation in Laramie County. Advancing south from the Cheyenne Substation, the

elevation of the route increases to approximately 6,600 ft AMSL near the Wyoming/Colorado border and then steadily decreases until it reaches an elevation of approximately 5,100 ft AMSL near the Ault Substation in Weld County, Colorado.

2.2.2 Vegetation

The principal vegetation types along the ROW are mixed grass prairie, shortgrass prairie, Wyoming big sagebrush steppe, and dryland and irrigated cropland (U.S. Geological Survey [USGS] 1996; Colorado State University [CSU] 2003).

Mixed grass prairie, which is present along the route in Wyoming and Colorado, is comprised of bunchgrasses, sod-forming grasses, and a variety of forbs and small shrubs. Common species include needle-and-thread grass, western wheatgrass, blue grama, Sandberg bluegrass, threadleaf sedge, needleleaf sedge, Junegrass, Indian ricegrass, prickly pear cactus, scarlet globemallow, fringed sagewort, Hood's phlox, milkvetch, and locoweed (Knight 1994). Depending on location, other species such as bluebunch wheatgrass, little bluestem, sideoats grama, prairie sandreed, sand dropseed, alkali sacaton, fourwing saltbush, greasewood, and inland saltgrass may be present.

Shortgrass prairie, present along the route in Colorado, is typically dominated by blue grama and buffalograss, which comprise 70-90% of vegetative composition by weight. During droughts, buffalograss tends to replace blue grama (Holechek et al. 1989). Winterfat is a common shrub, and species that occur in mixed grass prairie (as listed above) also occur in lesser amounts in shortgrass prairie.

Wyoming big sagebrush steppe, which occurs along the route in Wyoming, is dominated by Wyoming big sagebrush, either in dense homogeneous stands or in open shrublands interspersed with grasses and forbs. Associated species typically include western wheatgrass, Junegrass, needle-and-thread grass, Sandberg bluegrass, prickly pear cactus, scarlet globemallow, and rabbitbrush. Gardner's sagebrush, silver sagebrush, basin big sagebrush, and greasewood may also be present, depending on landscape position.

Dryland and irrigated cropland dominates the southernmost 17 miles of the transmission line ROW in Colorado. Crops include corn, wheat, and hay.

Other vegetation types occurring along the route include aspen woodland (at about mileposts [MPs] 105-107 between Laramie and Cheyenne), basin rock and soil (MPs 93 and 95 in the Laramie Basin and MP 121 on the eastern foothills of the Laramie Range), desert shrub (MPs 24, 25, 40, and 41 in the northwestern portion of the ROW), greasewood (scattered along the ROW), irrigated crops (at major drainages and irrigation ditches), lodgepole pine (MPs 130 and 131 west of Cheyenne), xeric upland shrub (scattered along the ROW), dryland crop (MPs 145 and 146 southwest of Cheyenne), forest riparian (MPs 119, 122, 127, and 128 along Crow and Lodgepole Creeks and their tributaries), and grass wetland (MPs 51 and 52 at Horne Lake) (USGS 1996).

Vegetation at the proposed Snowy Range Substation location is shortgrass prairie.

2.2.3 Surface Water Resources

The project area is within the North Platte and South Platte River watersheds. The proposed transmission line rebuild ROW crosses 232 surface waters; 195 surface water bodies occur along the CH-MM ROW, and the remaining 37 occur along the AU-CH ROW. Most are unnamed ephemeral channels that flow in response to snow melt or local precipitation events or are perennial and intermittent streams and playas. The largest surface waters crossed are the Medicine Bow and Laramie Rivers. Several unnamed channels are tributaries to perennial waters (e.g., Lone Tree, Spring, and Owl Creeks).

Water quality along the Wyoming portion of the transmission line is good to poor. The Laramie and Medicine Bow Rivers are Class 2AB waters that support all beneficial uses, including drinking water, game fish, nongame fish, fish consumption, other aquatic life, recreation, wildlife, agriculture, industry, and scenic values (Wyoming Department of Environmental Quality, Water Quality Division [WDEQ/WQD] 2001). Additional Class 2AB waters include the Little Laramie and Little Medicine Bow Rivers; Saylor, Austin, Troublesome, Difficulty, Rock, and Foote Creeks; and Allen and East Allen Lakes. Most other creeks and lakes near the ROW

(e.g., Coal Creek, Corral Creek, and Dry Creek) are Class 2C or 3B. Class 2C waters support all of the above-listed uses except drinking water and game fish, whereas Class 3B waters support all uses except drinking water, game fish, nongame fish, and fish consumption.

No specific surface water quality data are available for the Colorado portion of the transmission line ROW. Surface water use in the northern portions of the ROW is for livestock (e.g., stockponds) and wildlife use. In the southern portion of the Colorado ROW, surface waters are also used to irrigate cropland.

No surface waters occur at or adjacent to the proposed Snowy Range Substation location.

2.2.4 Climate

The project is located in the high plains of the southeastern portion of Wyoming and the northernmost portion of the front range of Colorado. From a climatological standpoint, the project area is considered semi-arid, with the potential for wind blown dust being high, similar to the rest of the intermountain west. This premise is supported by the high annual average wind speeds in the project area. Wind speeds range from an annual average of 12.2 miles per hour (mph) in Laramie, Wyoming, to 12.6 mph in Cheyenne, Wyoming, to 7.1 mph in Fort Collins, Colorado, near the southern terminus of the project (Western Regional Climate Center [WRCC] 2004).

As expected in a semi-arid area, annual average precipitation totals are low. Precipitation ranges from 10.36 inches per year in Medicine Bow, Wyoming, to 10.63 inches in Laramie, Wyoming, to 15.15 inches in Cheyenne, Wyoming (Martner 1986), to 13.30 inches per year in Nunn, Colorado (WRCC 2004). Spring and early summer are the wettest periods, with May being the wettest month.

The project area experiences fairly large diurnal variations in temperature due to the high project elevations and dry conditions. For example, in July, average temperatures range from the high 40°F to low 50°F in the morning to the upper 80°F range in the afternoon (WRCC 2004).

January is the coldest month of the year with daytime temperatures ranging from around 10°F in the morning to the high 30°F and low 40°F during the afternoon.

2.3 BLACK-FOOTED FERRET

2.3.1 Current Species Status

The black-footed ferret is a small mink-sized mammal that is listed as a federally endangered species. The species was placed into a captive breeding program in 1986 and has been re-introduced into various release sites in the west, and the USFWS designates these re-introduced populations as nonessential/experimental populations. Additional management flexibility is provided by the USFWS for managing nonessential/experimental populations that are located outside of National Park Service or National Wildlife Refuge System lands (e.g., BLM lands). Species designated as nonessential/experimental populations are treated by the USFWS as proposed rather than listed (USFWS 2006).

The black-footed ferret was once distributed throughout the high plains of the Rocky Mountain and western Great Plains regions (Forrest et al. 1985). The western portion of the proposed CH-MM transmission line lies within historic black-footed ferret habitat, and black-footed ferret observations were recorded within 1.0 mile of the ROW in 1968 and within approximately 4 miles of the existing transmission line at two separate locations in 1979. However, no specimens were collected or trapped. The only known populations of black-footed ferrets currently exist in captive breeding facilities and in nonessential/experimental populations that have been re-introduced into several areas in the western U.S. The first black-footed ferret re-introduction efforts occurred in 1991 in Shirley Basin in south-central Wyoming (WGFD 1997).

2.3.2 Habitat Description

Prairie dogs are the primary food source of black-footed ferrets (Sheets et al. 1972); however, black-footed ferrets have also been historically collected away from prairie dog towns (Forrest

et al. 1985). In 1981, black-footed ferrets were considered extinct until a small population was discovered west of Meeteetse, Wyoming, in northwest Wyoming. Following outbreaks of canine distemper, all surviving black-footed ferrets were captured and brought into captivity in 1986, and a captive breeding program was initiated (USFWS 1989). The captive breeding program is designed with the objective of rebuilding the population of black-footed ferrets and re-introducing the species into suitable habitats in the wild.

The first ever black-footed ferret re-introductions began in 1991 in the Shirley Basin/Medicine Bow Management Area located in south-central Wyoming (Figure 2.1). There are two re-introduction areas located within this area. The first re-introduction area is the Shirley Basin Management Zone, and re-introduction efforts began and continue in this area. The second re-introduction area is the Medicine Bow Management Zone, and black-footed re-introductions began in this area in 2005 (personal communication, March 8, 2006, with Martin Grenier, WGFD, Lander, Wyoming). The proposed transmission line is located approximately 9 miles southwest of the Shirley Basin Management Zone. However, approximately 51 miles of the western portion of the CH-MM transmission line are located in the Shirley Basin/Medicine Bow Management Area, including approximately 25 miles of transmission line that would be located within in the Medicine Bow Management Zone.

Since prairie dog are the primary food source for black-footed ferrets, the proposed ROW was initially surveyed (not mapped) for prairie dog colonies by TRC Mariah Associates Inc. (TRC Mariah) biologists between December 2002 and August 2004. Based on the results of these surveys, it was determined that white-tailed prairie dog colonies intersect or are located near approximately 23 miles of the existing CH-MM transmission line segment in Wyoming (16 miles in Carbon County, 5 miles in Albany County, and 2 miles in Laramie County). Additionally, it was determined that white-tailed prairie dog colonies intersect or are located near approximately 0.2 mile of the existing AU-CH transmission line segment, and all of this area is located in Weld County, Colorado. This represents approximately 17% of the CH-MM transmission line segment and less than 1% of the AU-CH transmission line segment (see Figure 2.1).

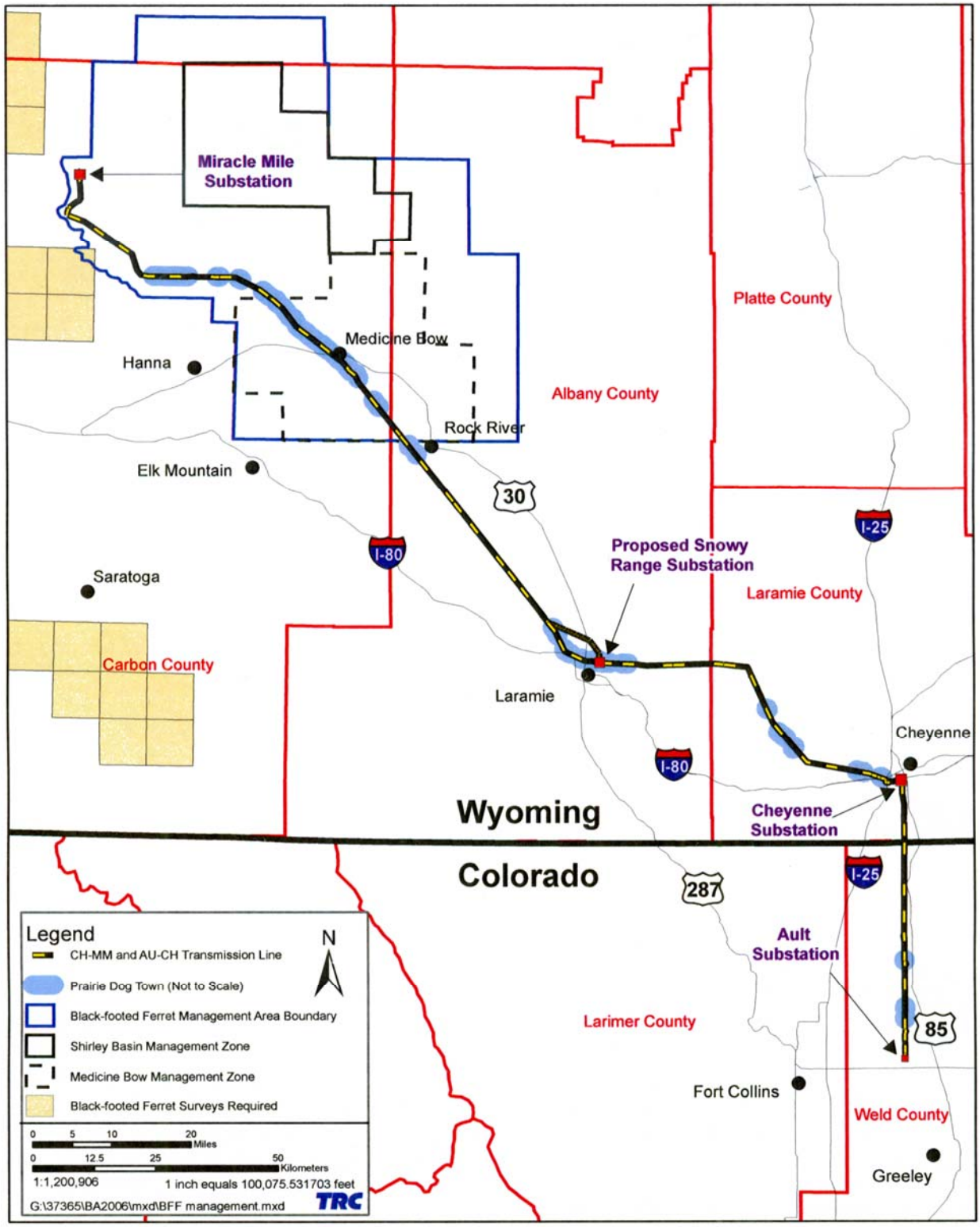

Figure 2.1 White-tailed Prairie Dog Habitat and Ferret Management Areas, Proposed CH-MM and AU-CH Transmission Line, Southeastern Wyoming and Northeastern Colorado.

White-tailed prairie dog colonies intersect or are located near approximately 16 miles of the existing CH-MM segment within the Shirley Basin/Medicine Bow Management Area. In addition, white-tailed prairie dog colonies intersect or are located near approximately 10 miles of the existing CH-MM segment within the Medicine Bow Management Zone.

The proposed CH-MM and AU-CH transmission line is located outside of areas requiring black-footed ferret surveys (USFWS 2006) (see Figure 2.1). The closest required black-footed ferret survey area is located approximately 2 miles southwest of the proposed transmission line.

2.3.3 Determination of Effects

The proposed ROW is located outside of areas requiring black-footed ferret surveys (see Figure 2.1) (USFWS 2004), and WGFD indicated that black-footed ferret surveys are not warranted within the proposed ROW (personal communication, 2006, with Martin Grenier, WGFD). In 2005, the re-introduced Shirley Basin black-footed ferret population was estimated to include about 150 black-footed ferrets (personal communication, 2006, with Bob Oakleaf, WGFD). Surveys were also completed in September 2006, during which 119 ferrets were captured and marked, and, while the WGFD is currently developing the population size estimate, a preliminary evaluation suggests that there may be up to 300 ferrets. Re-introduced black-footed ferrets have not been documented in the vicinity of the CH-MM corridor, and, because the WGFD anticipates little potential for impacts from the project, surveys are not recommended by the WGFD for ferrets along the corridor prior to construction. Furthermore, the black-footed ferret management plan requires the WGFD to remove ferrets from areas where construction projects could impact individuals (WGFD and BLM 1991). Since no ferrets have been documented on or near the corridor, and since it would be incumbent on the WGFD to remove any such ferrets, the black-footed ferret would not be impacted. The project would have **no effect** on black-footed ferrets.

2.4 PREBLE'S MEADOW JUMPING MOUSE

2.4.1 Current Species Status

Preble's meadow jumping mouse is a small rodent in the Zapodidae family and is one of 12 recognized subspecies of the meadow jumping mouse (Clark and Stromberg 1987). Preble's meadow jumping mouse was designated as threatened under the ESA in its entire range by the USFWS in 1998. As a result of listing Preble's meadow jumping mouse, the USFWS has identified and designated critical habitat areas for the mouse under the ESA in southeastern Wyoming and along the Front Range in Colorado. However, in January 2005, the USFWS determined that the Preble's meadow jumping mouse should not be classified as a separate species of meadow jumping mouse and began the process to formally delist it. Before the rule is finalized, the USFWS will evaluate threats to the meadow jumping mouse in all or a significant portion of its range. Until the final determination is made by the USFWS, the Preble's meadow jumping mouse will continue to be protected under the ESA.

2.4.2 Habitat Description

2.4.2.1 General Habitat

Preble's meadow jumping mouse occurs in low undergrowth consisting of grasses and forbs in wet meadows and riparian areas where tall shrubs and low trees provide adequate cover. It prefers lush vegetation along watercourses or herbaceous understories in wooded areas with close proximity to water (Clark and Stromberg 1987; USFWS 2006). A portion of the CH-MM and AU-CH transmission line is located in overall range of the Preble's meadow jumping mouse (USGS 1996) (Figure 2.2).

While no site-specific surveys for Preble's meadow jumping mouse have been conducted along the CH-MM segment, general habitat surveys for sensitive species, including Preble's meadow jumping mouse, within and near the proposed transmission line were conducted by TRC Mariah

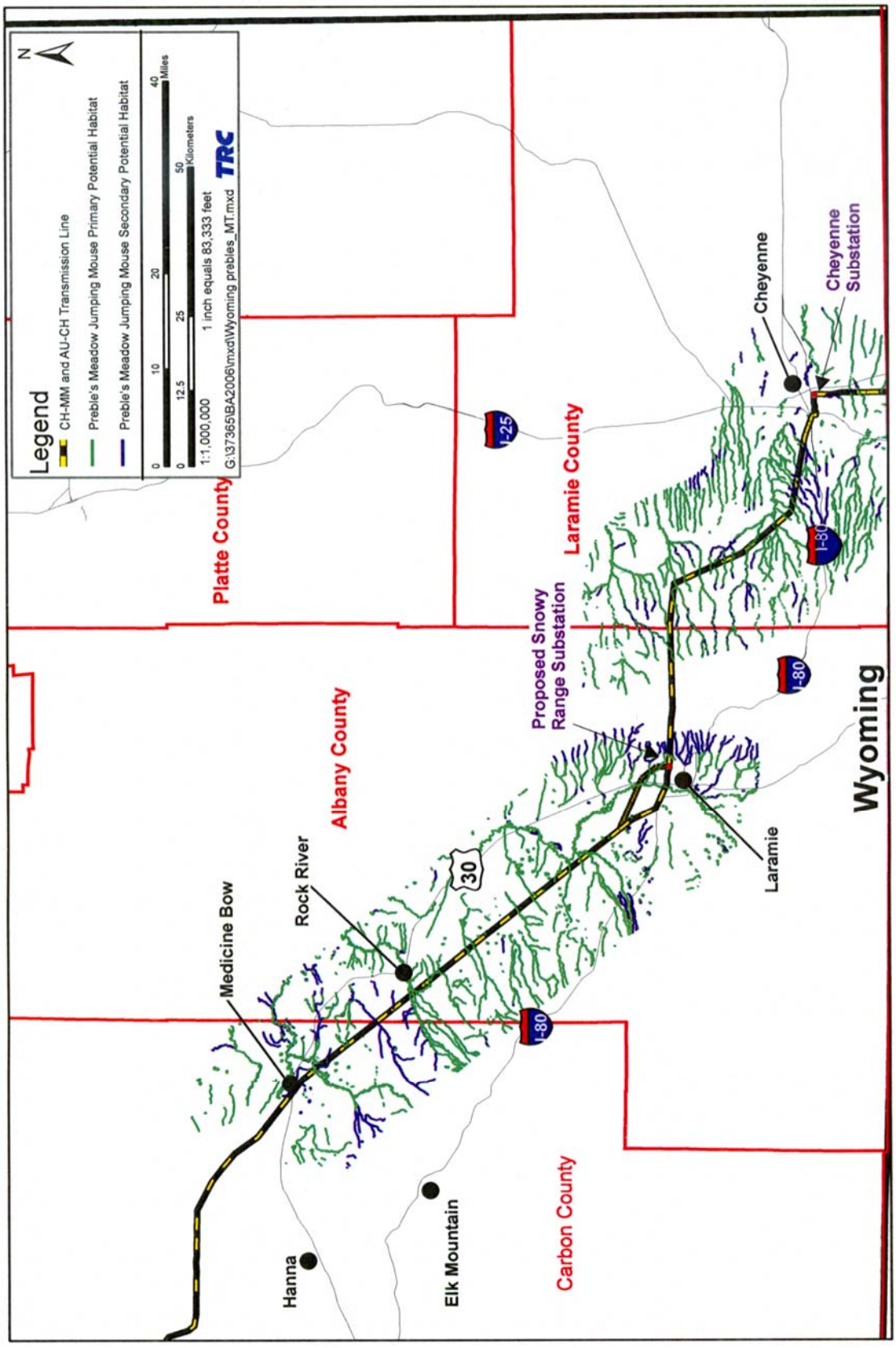

Figure 2.2 Potential Preble's Meadow Jumping Mouse Habitat, Proposed CH-MM and AU-CH Transmission Line, Southeastern Wyoming and Northeastern Colorado.

biologists between December 2002 and August 2004. In addition, based on information from the Wyoming Natural Diversity Database (WNDD) (2002) and USGS (1996), it was determined that the proposed CH-MM segment would likely cross numerous areas that provide suitable habitat for the Preble's meadow jumping mouse (see Figure 2.2).

Several existing transmission line structures are currently located within the 100-year floodplains (based on the Federal Emergency Management Agency [FEMA] maps) (Department of Housing and Urban Development 1986; FEMA 1991, 1994) of various drainages that are potential habitat and proposed critical habitat (Table 2.3).

The Colorado portion of the AU-CH transmission line segment is also located within the overall range of the Preble's meadow jumping mouse; however, according to the CDOW, the closest occupied range is approximately 4 miles west of the existing/proposed transmission line (Figure 2.3) (CDOW 2006). During the 2004 general habitat surveys conducted by TRC Mariah biologists, a single 14-acre parcel of potential Preble's meadow jumping mouse habitat was identified within the project ROW. This area is located approximately 13 miles north of the Ault Substation (see Figure 2.3). While no site-specific surveys were conducted at the time, the habitat is suitable for the presence of Preble's meadow jumping mouse.

2.4.2.2 Critical Habitat

As a result of listing Preble's meadow jumping mouse, the USFWS has identified and designated critical habitat under the ESA for the mouse, and several of these critical habitat areas in Wyoming are located near the proposed CH-MM and AU-CH transmission line. A portion of the existing/proposed transmission line crosses critical habitat twice on North Lodgepole Creek and once on Lodgepole Creek (Figure 2.4).

The closest critical habitat in Colorado is located approximately 25 miles west of the AU-CH segment in central Larimer County, Colorado. No critical habitats for Preble's meadow jumping mouse have been designated in Weld County, Colorado. Therefore, the proposed project would have no adverse affects on critical habitat for Preble's meadow jumping mouse in Colorado.

Table 2.3 Existing Structures Known to be Located or Possibly Located in Potential Preble's Mouse Habitat.

Milepost (Structure Number)	Drainage
Known to be located in potential habitat	
119 (114-7)[1]	Lodgepole Creek
117, 118 (113-5, 114-5)[1]	North Lodgepole Creek
127, 128 (123-3, 123-8)	North Fork Crow Creek
130, 131 (126-3, 126-4, 126-5, 126-6)	South Crow Creek
134, 135 (130-3, 130-10)	Tributary to Crow Creek
Possibly located in potential habitat	
112 (107-9, 107-10)	Meadow Fork Branch of Horse Creek
106, 107 (102-4, 102-5)	Horse Creek
124 (120-4, 120-5)	Unnamed drainage
125 (121-3, 121-4)	Unnamed drainage

[1] Proposed critical habitat.

2.4.3 Analysis of Effects

2.4.3.1 Likely Direct Effects

The proposed project could disturb riparian habitats that could affect the Preble's meadow jumping mouse.

With the successful implementation of the mitigation measures described in Section 1.1.9, the proposed project would have no direct impacts on Preble's meadow jumping mouse and/or their habitat or their critical habitats.

2.4.3.2 Likely Indirect Effects

The proposed project would have negligible indirect effect on Preble's meadow jumping mouse because the proposed project would result in no topsoil removal or salvage operations and thus would have negligible impacts on soil and vegetation resources and Preble's meadow jumping

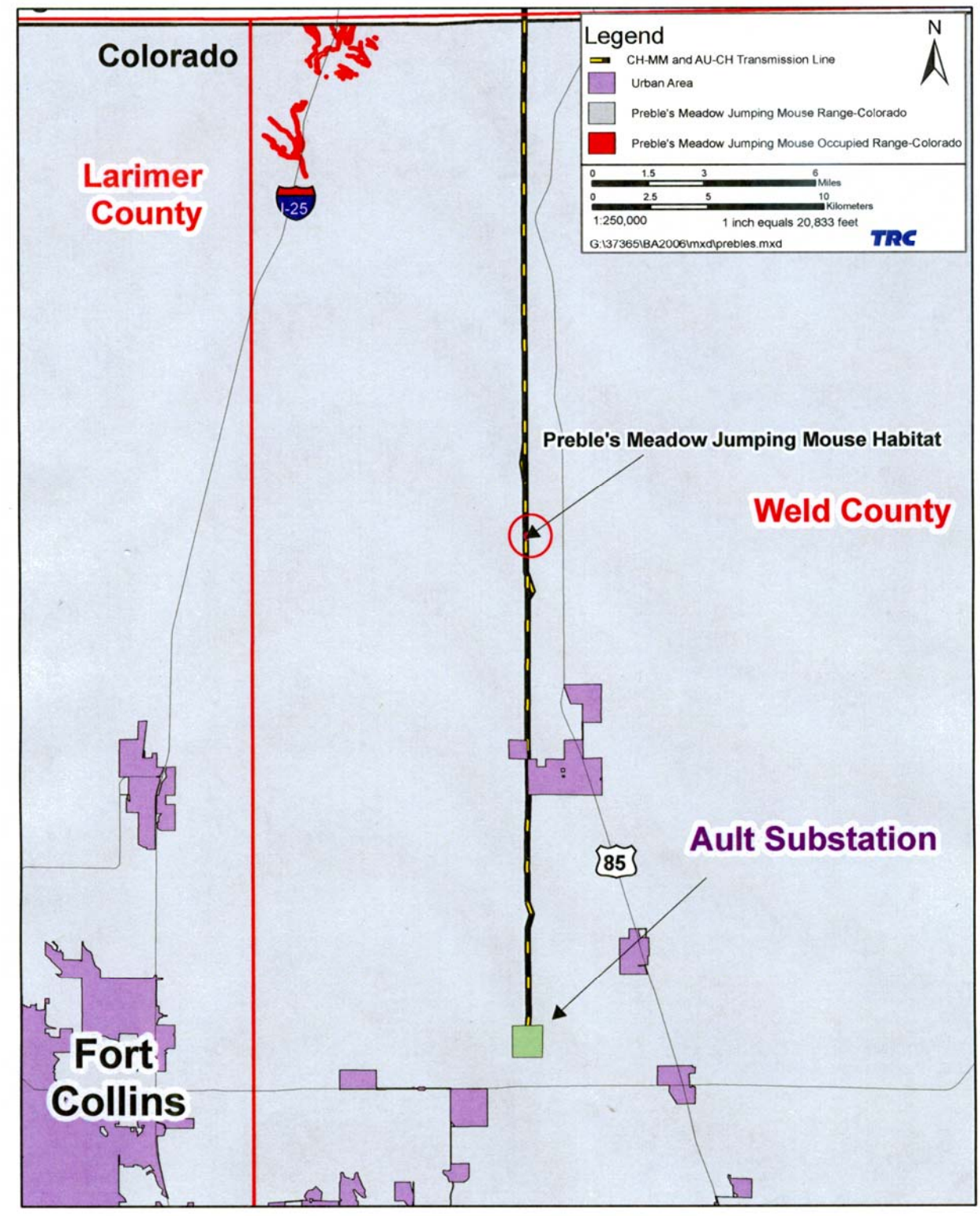

Figure 2.3 Potential Preble's Meadow Jumping Mouse Habitat, Proposed AU-CH Segment, Northeastern Colorado.

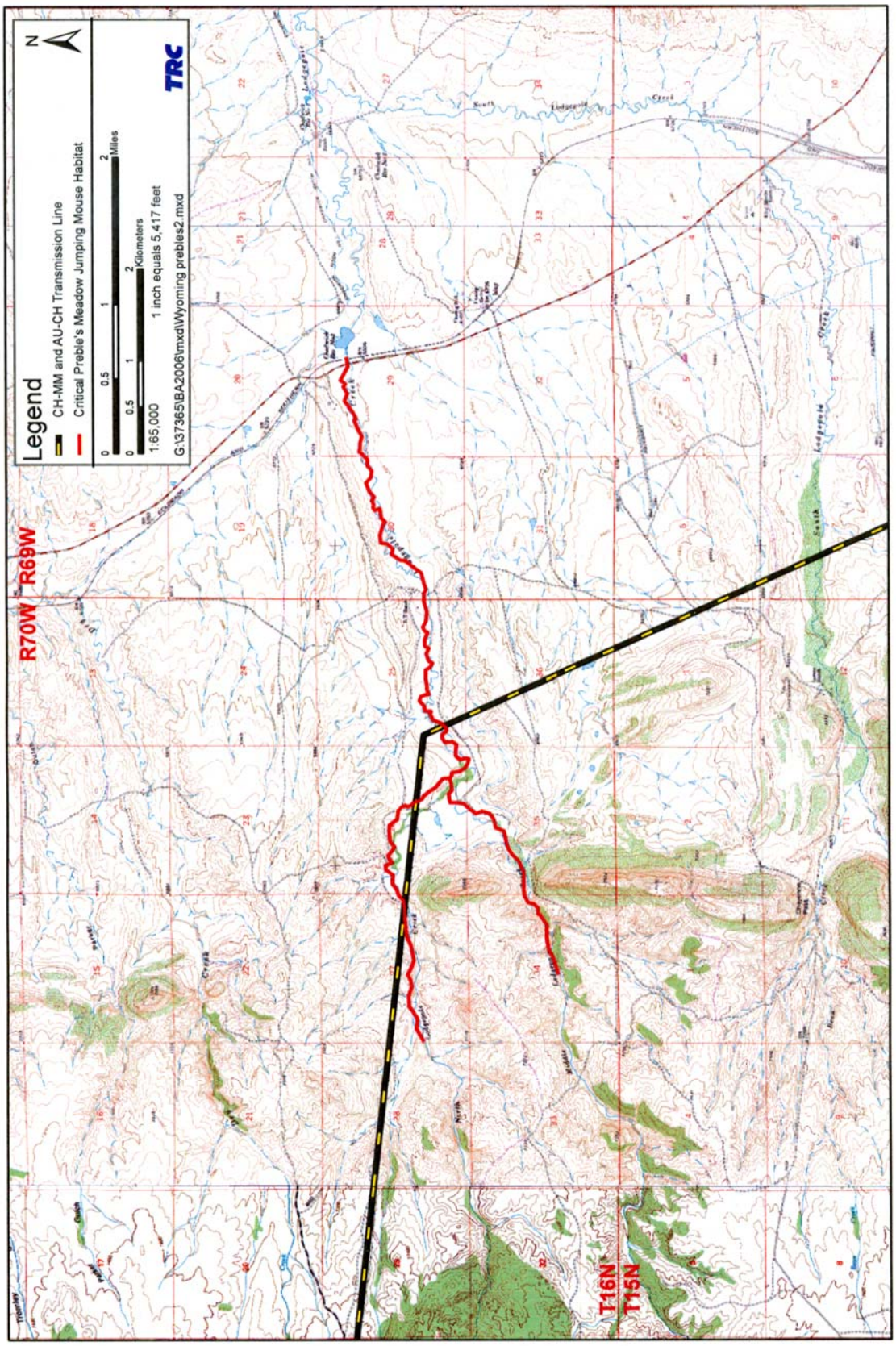

Figure 2.4 Critical Preble's Meadow Jumping Mouse Habitat, Proposed CH-MM Transmission Line Project, Southeastern Wyoming.

mouse and/or its habitat or its critical habitats. With the implementation of the mitigation measures described in Section 1.1.9, the proposed project would have minimal indirect impacts on Preble's meadow jumping mouse and/or its habitat or its critical habitats.

2.4.4 Likely Cumulative Impacts

Cumulative effects to the threatened Preble's meadow jumping mouse, its habitat, and/or critical habitat would not be significant or important because there are no past, present, or reasonably foreseeable future actions that, when combined with the proposed CH-MM and AU-CH transmission line project, would result in impacts beyond those that already exist or are addressed in this BA.

2.4.5 Mitigation Measures and Determination of Effects

No additional mitigation is proposed.

Based on the discussions presented above, the proposed project would likely have minimal or no direct or indirect effects or cumulative effects on Preble's meadow jumping mouse. Therefore, the proposed project **may affect but is not likely to adversely affect** Preble's meadow jumping mouse and/or their habitat. The project would also cross Preble's meadow jumping mouse critical habitat; however, the proposed project would **not adversely modify critical habitat**. Western has incorporated sufficient avoidance and other mitigation measures into the project that any effects to Preble's meadow jumping mouse would be insignificant.

2.5 BALD EAGLE

2.5.1 Current Species Status

Protection was initially provided for bald eagles through the passage of the *Bald Eagle Protection Act of 1940* and the *Migratory Bird Treaty Act*. In 1973, the bald eagle was listed as endangered under the ESA. In response, the *Recovery Plan for the Pacific Bald Eagle* (USFWS

1986) was developed to address the recovery of bald eagles in Washington, Oregon, California, Nevada, Idaho, Wyoming, and Montana. On July 12, 1995, a final rule to downlist the bald eagle from endangered to threatened in the lower 48 states was published, and on July 6, 1999, the USFWS proposed delisting the bald eagle from the ESA.

2.5.2 Habitat Description

The proposed project area is located outside of any identified bald eagle nesting or roosting areas; however, one bald eagle nest is located within 2 miles of the project ROW. This bald eagle nest (active in 2003) is located 0.85 mile northeast of the existing and proposed CH-MM segment, approximately 16 miles west of the Snowy Range Substation in Albany County (BLM 2003) (Figure 2.5). One bald eagle was also observed in December 2002 approximately 0.5 mile south of the existing transmission line adjacent to the Seminoe Reservoir near the Miracle Mile Substation. The closest known bald eagle nest site to the proposed transmission line in Colorado is located approximately 12 miles south of the Ault Substation (Figure 2.6) (CDOW 2006).

Bald eagle nesting habitat has been described by Wright and Escano (1986) and the Greater Yellowstone Bald Eagle Working Group (1996). In Wyoming, nest sites generally are distributed around the periphery of lakes and reservoirs at least 80.0 acres in area and along forested corridors within 1.0 mile of major rivers (Greater Yellowstone Winter Wildlife Working Group 1999). Bald eagles display strong fidelity to a breeding area and often to a specific nest site. Nests are most commonly constructed in multi-layered mature or old growth stands of large-diameter trees of a variety of species, including Douglas fir, ponderosa pine, cottonwood, larch, and spruce. In Wyoming, nests are often located in tall tree stands of 3.0 acres, with large emergent trees and snags providing important nesting and perching habitat. Bald eagles usually nest as close to maximum foraging areas as possible, generally avoiding areas of human activity (Harmata and Oakleaf 1992).

Nest building and nest repair may occur during every season in well-established territories; however, it most commonly occurs during the autumn, late winter, and early spring. Alternate

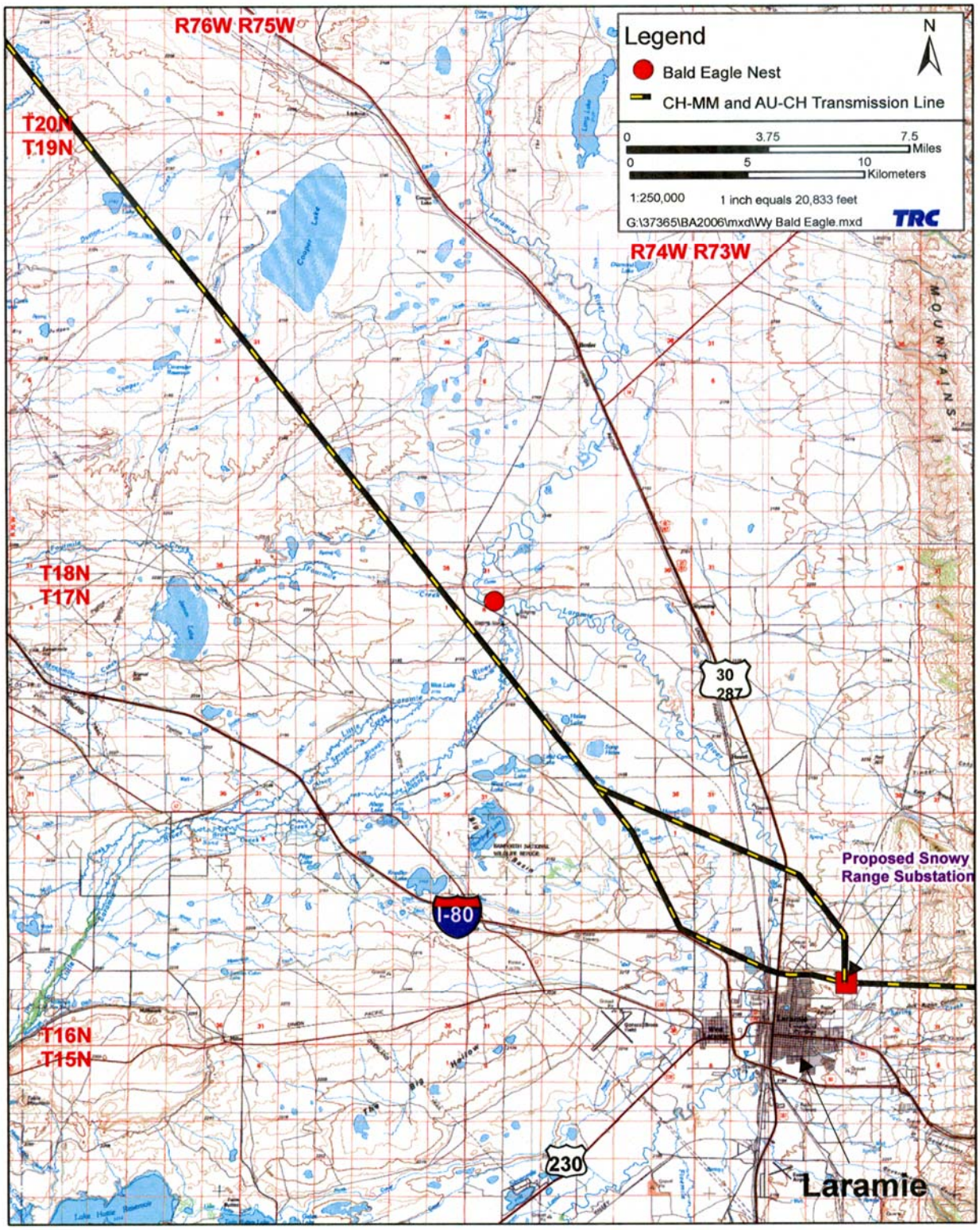

Figure 2.5 Bald Eagle Nest Site, Proposed CH-MM Segment, Southeastern Wyoming.

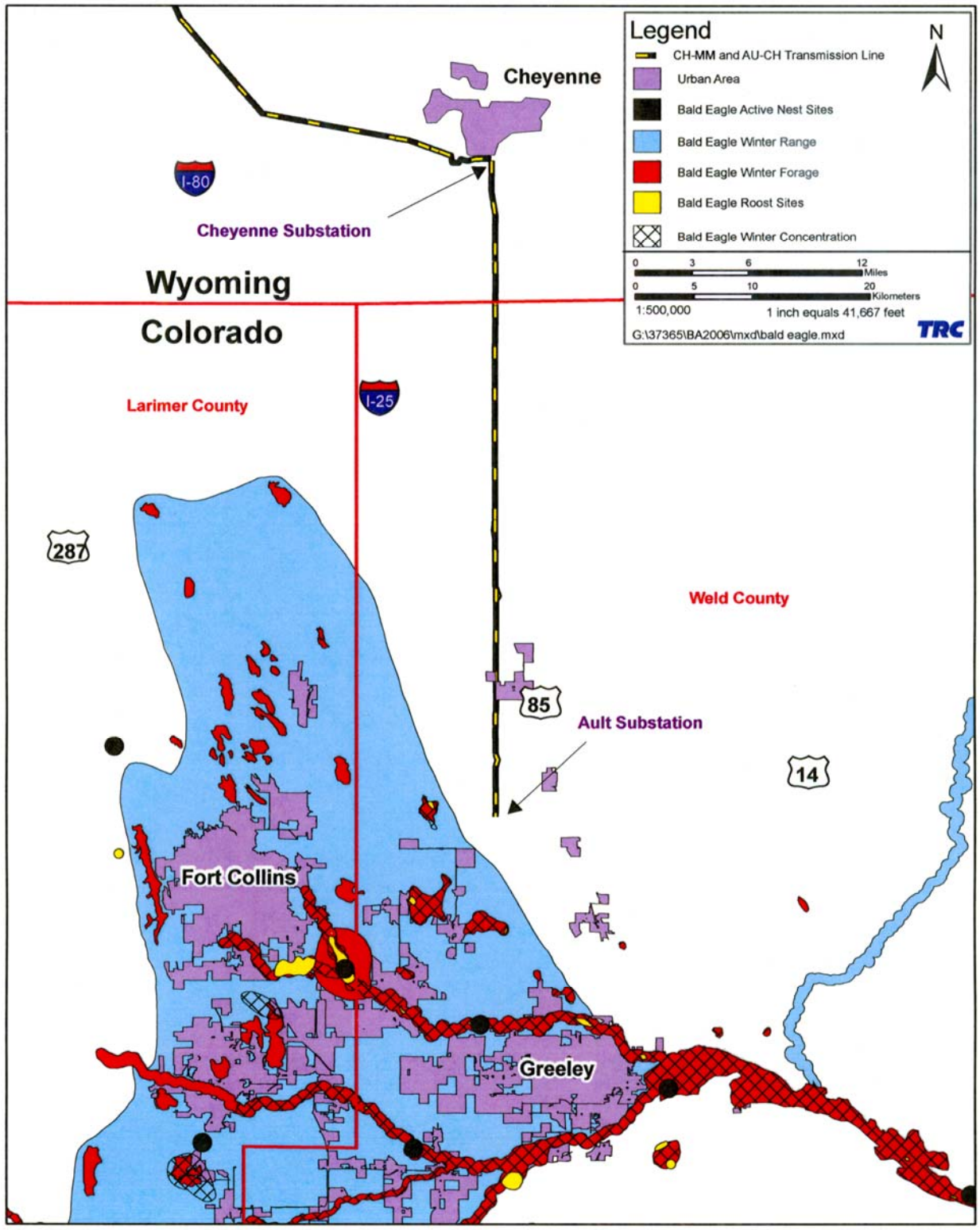

Figure 2.6 Bald Eagle Nest Sites and Habitats, Proposed AU-CH Segment, Northeastern Colorado.

nests may be present in a breeding area. In Wyoming, egg laying occurs as early as February 7 and as late as mid-April. Incubation spans 31 to 35 days and may be influenced by ambient temperatures (i.e., longer in colder temperatures) (Alt 1980; Harmata and Oakleaf 1992). Hatching occurs from mid-March to mid-May and the nesting period lasts 11 to 14 weeks. Once fledged, young are dependent on adults for 6 to 10 weeks (Gerrard et al. 1974; McClelland 1992; Wood 1992).

Adults may or may not migrate during the winter. Bald eagle winter habitat generally is associated with areas of open water where fishes and/or waterfowl congregate (Greater Yellowstone Winter Wildlife Working Group 1999; Stahlmaster 1987). Wintering bald eagles occupy unfrozen portions of lakes and free-flowing rivers and may occupy upland areas where ungulate carrion, game birds, and lagomorphs are available (Swenson et al. 1986).

Although winter roosting habitat is not necessarily close to water or food sources, the availability of an abundant source of food (usually associated with open water or abundant carrion), of foraging perches, and of secure night roost sites away from human activities are important habitat components (Greater Yellowstone Winter Wildlife Working Group 1999). Preferred habitat includes a protected microclimate that provides shelter from harsh weather and is characterized by tall trees that extend above the forest canopy and locations that provide clear views and open flight paths (Stahlmaster 1987).

According to the BLM and WGFD (personal communication, March 14, 2006, with Heath Kline, BLM, Rawlins, Wyoming, and Andrea Cerovski WGFD, Lander, Wyoming), there are no identified bald eagle winter concentration areas or roost areas within 5 miles of any segment of the CH-MM segment. However, the CDOW has identified bald eagle winter range and numerous bald eagle winter concentration and roots areas near the AU-CH segment (CDOW 2006) (see Figure 2.6). A large bald eagle winter area is located west of the transmission line in Colorado, and the closest bald eagle winter roost and/or concentration area is located approximately 3 miles west of the Ault Substation in Weld County (see Figure 2.6).

Bald eagles are opportunistic feeders and will prey on fish, waterfowl, lagomorphs and other ground-dwelling mammals, and ungulate carrion. They also will steal prey from other eagles, osprey, otters, and other species (Stahlmaster 1987; Stangl 1994). In Wyoming, fish make up the majority of prey items obtained by breeding pairs (Harmata and Oakleaf 1992). Ungulate carrion is a major winter food source (Harmata and Oakleaf 1992). An available prey base may be the most important factor determining bald eagle nesting habitat suitability (Greater Yellowstone Winter Wildlife Working Group 1999), nesting density (Dzus and Gerrard 1993), and productivity (Hansen 1987).

2.5.3 Analysis of Effects

2.5.3.1 Likely Direct Effects

The proposed project could adversely affect one bald eagle nest site identified within 0.85 mile of the proposed transmission line in Wyoming. To minimize impacts to nesting bald eagles, Western would survey the nest site prior to construction in the immediate area. With the implementation of mitigation measures described in Section 1.1.9, no impacts to nesting bald eagles would occur.

The closest bald eagle winter range, winter concentration area, and winter forage areas are located approximately 3 miles west of the Ault Substation (see Figure 2.6). There are no identified bald eagle winter ranges, winter concentration areas, or winter forage areas within 10 miles of the proposed transmission line in Wyoming. Therefore, the proposed project would have no effect on winter range, winter concentration areas, or winter forage areas.

Raptor electrocution and collision hazards are potential direct impacts to bald eagles; however, the potential for these impacts would be similar to the existing transmission structures and would be minimized by proper planning and construction design (APLIC 1994, 1996). One of the primary ways to minimize the potential for electrocution of large raptors is to ensure adequate separation of energized conductors, ground wires, and other metal hardware. A minimum of 5.0 ft of space between conductors is recommended to eliminate the chance of bald eagle

electrocution by simultaneous skin-to-skin contact with two conductors (APLIC 1996; Olendorff et al. 1981). Although wing-tip to wing-tip contact would still be possible, dry feathers are generally poor conductors and, under most circumstances, the risk of electrocution will be minimal. When adequate separation of conductors and potential conductors is not possible, insulation should be used. The proposed transmission structures exceed 5-ft space requirements between conductors and are generally not considered an electrocution hazard to raptors, including bald eagles. Discouraging raptors from perching and nesting on active power line facilities can also minimize risk of electrocution. This can be accomplished by 1) avoiding the removal of natural perches (i.e., large trees and snags), where possible, and/or providing attractive alternate perches or nesting platforms nearby; 2) constructing elevated perches on poles to separate perching birds from hazardous portions of the power line; and/or 3) use of raptor antiperching/antinesting devices (APLIC 1994, 1996).

The potential for collision hazard is typically localized and is influenced by avian use patterns, topography, visibility, and avian species size and maneuverability (APLIC 1994). Generally, raptors are infrequently reported as victims of power line collision (Olendorff and Lehman 1986) because they are highly maneuverable, have excellent visual acuity, and often soar or hover when foraging (APLIC 1994). The risk of collisions appears to increase in areas where power lines cross flight corridors frequently used by birds (e.g., riparian corridors). Although the proposed transmission line segment located in Colorado may span riparian corridors used by foraging bald eagles, existing transmission lines are already in place in these areas, and there have been no reports of bald eagle collisions with power lines. Standard mitigation measures commonly used to minimize avian collisions with power lines include aerial marking spheres, spiral vibration dampers, and bird flight diverters. Potential for collision may also be reduced by locating the line at or below the height of nearby trees and minimizing the removal of nearby trees that extend above the level of the power line. Large birds will gain altitude to clear the tree line, thereby avoiding the power line (Thompson 1978; Raevel and Tombal 1991). By NESC definition, hazard trees are typically those that extend above the power line and are near enough to come into contact with the line if toppled by wind or lightning. Thus, in the immediate vicinity of the corridor, the transmission line would likely need to be higher than adjacent trees.

With successful implementation of the mitigation measures described in Section 1.1.9, the proposed project will likely have minimal direct effects on bald eagles that use the transmission line corridor.

2.5.3.2 Likely Indirect Effects

Indirect effects to bald eagles as a result of the proposed project include displacement of foraging bald eagles due to construction activities. However, displacement effects would be minimal because the proposed corridor does not contain bald eagle roosts, winter concentration areas, or specific winter foraging areas, although year-round foraging may occur anywhere along the corridor. Potential impacts to foraging habitat will be mitigated by timely implementation of reclamation and stabilization measures specified in the proposed project.

Impacts to large conifers and other trees may affect bald eagle perch and prey availability. Suitable perches (i.e., large snags and trees) occur along the CH-MM segment, but there are no identified winter ranges, roosts, forage, or concentration areas near this segment of the project. There are few suitable perches along the AU-CH segment. Because an existing power line is already in place, tree removal, tree topping, and limb removal would be limited to trees that pose a hazard to operation and maintenance of the transmission line. Therefore, the proposed project would likely have negligible indirect effects on bald eagles and/or their habitat.

2.5.4 Likely Cumulative Impacts

Cumulative effects to the threatened bald eagle and/or its habitat would not be significant or important because there are no past, present, or reasonably foreseeable future actions that, when combined with the proposed CH-MM and AU-CH transmission line project, would result in impacts beyond those that already exist or are addressed in this BA.

2.5.5 Mitigation Measures and Determination of Effects

No additional mitigation is proposed.

Direct, indirect, or cumulative impacts from the proposed project would have minimal direct, indirect, or cumulative effects on bald eagles and the proposed CH-MM and AU-CH transmission line project **may affect but is not likely to adversely affect** bald eagles and/or their habitat. Western has incorporated sufficient avoidance and other mitigation measures into the project that any effects to bald eagles would be discountable or insignificant.

2.6 MEXICAN SPOTTED OWL

2.6.1 Current Species Status

The Mexican spotted owl is one of three subspecies of spotted owls that are found in the U.S., and it was first listed under the ESA in 1993. The Mexican spotted owl is currently designated as threatened in its entire range, and critical habitat has been designated in Arizona, Colorado, New Mexico, Texas, and Utah.

2.6.2 Habitat Description

Mexican spotted owls are found in a variety of habitats within its range. This species primarily nests in closed canopy forests and rocky canyons, and it will nest in stick nests built by other birds, on debris platforms in trees, and in tree cavities. The Mexican spotted owl begins courtship in March, and the first eggs are typically laid in early April. Females incubate the eggs for approximately 30 days. The nest is active and maintained until fall when the young owls will leave the natal area. Mexican spotted owls normally feed on small nocturnal mammals, birds, bats, and arthropods. Little is known about the habitat range of foraging owls except that they forage a wider range of habitats than they use for roosting.

Based on available information, northern Colorado is the northern limit of potential range for the Mexican spotted owl (CDOW 2006). The Mexican spotted owl does not range into Wyoming, and there have been no sightings in the state (WGFD 2004). A limited amount of potential habitat for the Mexican spotted owl was modeled by the CDOW (2006), and it is located in the northwestern corner of Weld County, Colorado. The AU-CH transmission line segment intersects this potential habitat; however, during the 2004 general habitat surveys conducted by TRC Mariah biologists did not identify any suitable Mexican spotted owl habitat along the AU-CH transmission line segment.

Critical habitats have been designated by the USFWS for the Mexican spotted owl in Colorado, Utah, Arizona, and New Mexico. However, the closest Mexican spotted owl critical habitat is located approximately 80 miles southwest of the Ault Substation.

2.6.3 Determination of Effects

Because no Mexican spotted owls have been documented and no habitat occurs along the transmission line corridor, the project will have **no effect** on Mexican spotted owls.

2.7 WYOMING TOAD

2.7.1 Current Species Status

Wyoming toad (*Bufo hemiophrys baxteri*) was first listed under the ESA in 1984, and it is currently designated as endangered in its entire range (USFWS 2006). As part of the recovery plan for the species, a captive breeding was initiated in 1992, and by 1994, the species was extinct in the wild and only captive populations remained. Since 1992, thousands of Wyoming toad tadpoles have been released into Lake George and Rush Lakes in the Hutton National Wildlife Refuge and Mortenson Lake in the Mortenson National Wildlife Refuge in south-central Albany County, Wyoming (USFWS 1998a) (Figure 2.7). Currently, no critical habitats have been designated for the Wyoming toad.

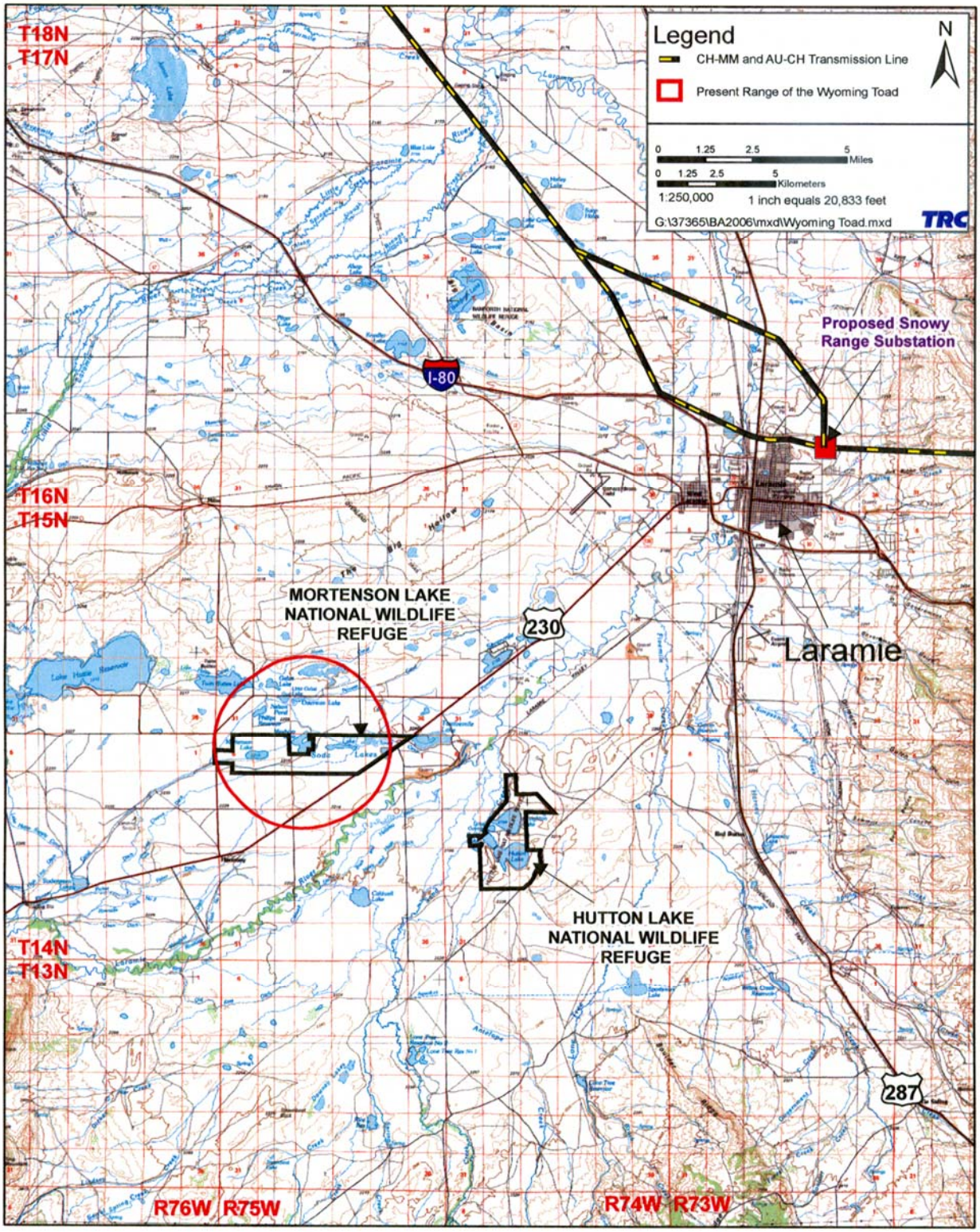

Figure 2.7 Wyoming Toad Re-introduction/Release Areas, Proposed CH-MM Transmission Line Segment, Southeastern Wyoming.

2.7.2 Habitat Description

Wyoming toad historically occupied floodplains, ponds, and seepage lakes associated with shortgrass communities occurring between 7,000 and 7,500 ft AMSL within the Laramie Basin of south-central Wyoming (USFWS 2006), and all collections and observations of the Wyoming toad have taken place within 30 miles of Laramie, Wyoming. The Wyoming toad does not occur in Colorado (CDOW 2006).

Up until the early 1970s, the Wyoming toad inhabited the floodplains of the Laramie rivers and the margins of ponds in the Laramie Basin. Declines in both range and abundance were noted during the mid-1970s and continued through 1994. The decline appears to be related to presence of amphibian chytrid fungus in Mortenson Lake. This fungus has been implicated in declines and extinctions of numerous amphibia species worldwide, and analysis indicates that the fungus has been present in Mortenson Lake since at least 1989. Prolonged drought, predation, pesticide use, irrigation practices, and lack of genetic diversity may also limit the abundance and distribution of the Wyoming toad (Baxter et al. 1982; Hammerson 2004; USFWS 1998a).

2.7.3 Determination of Effects

Since the project is over 12 miles from Hutton Lake and over 14 miles from Mortenson Lake, the two areas with Wyoming toad populations, the project would have **no effect** on this species (personal communication, 2004, with Kathleen Erwin, USFWS).

2.8 BLOWOUT PENSTEMON

2.8.1 Current Species Status

Blowout penstemon was first listed under the ESA in 1987 and is currently designated as endangered in its entire range (USFWS 2006). There is no critical habitat designated for blowout penstemon.

2.8.2 Habitat Description

Blowout penstemon is a potential resident in "blowouts"--sparsely vegetated depressions in active sand dunes created by wind erosion that typically form on windward sandy slopes where the vegetation has been removed or disturbed. Currently, the species is primarily found in western Nebraska and one county in Wyoming (Fertig 2000a). The plant's current range in Wyoming consists of the Ferris dunes area in northwestern Carbon County where the plant is restricted to two habitat types: on steep northwest-facing slopes of active sand dunes with less than 5% vegetative cover and on north-facing sandy slopes on the lee side of active blowouts with 25 to 40% vegetative cover (USFWS 2006). Blowout penstemon is not likely to be found in Colorado (USFWS 2005; Spackman et al. 1997).

Based on the results of general habitat surveys conducted by TRC Mariah biologists between December 2002 and August 2004, no suitable habitat for blowout penstemon was identified along the CH-MM and AU-CH corridor.

2.8.3 Determination of Effects

Because no known blowout penstemon or its habitat has been identified within the proposed project area, the project would have no direct, indirect, or cumulative effects on the blowout penstemon and would have **no effect** on blowout penstemon and/or its habitat.

2.9 UTE LADIES'-TRESSES

2.9.1 Current Species Status

Ute ladies'-tresses was first listed under the ESA in 1992 and is currently designated as threatened in its entire range (USFWS 2006). No critical habitat has been designated for Ute ladies'-tresses.

2.9.2 Habitat Description

Currently, Ute ladies'-tresses is found from western Nebraska, southeastern Wyoming, north-central Colorado, northeastern and southern Utah, east-central Idaho, southwestern Montana, and north-central Washington (Fertig 2000b). Ute ladies'-tresses is a perennial plant and a member of the orchid family that inhabits moist streambanks, wet meadows, and abandoned stream channels at elevations of 1,780-6,800 ft (Fertig 2000b; Spackman et al. 1997). Where it occurs in ephemeral drainages, groundwater is typically shallow (i.e., within approximately 18 inches of the ground surface) (personal communication, March 16, 2000, with Pat Deibert, USFWS, Cheyenne, Wyoming; personal communication, March 22, 2000, with Walt Fertig, WNDD, Laramie, Wyoming). This species has only four occurrences in Wyoming; all discoveries were made between 1993 and 1997 in northwestern Converse, southeastern Niobrara, southwestern Goshen, and north-central Laramie Counties (Fertig 2000b). The closest occurrence of Ute ladies'-tresses to the project area was recorded in north-central Laramie County (approximately 30 miles north of the proposed ROW) (Fertig 2000b). Occurrences of Ute ladies'-tresses have been documented in eastern Larimer County, Colorado, approximately 30 miles west of the proposed ROW (Spackman et al. 1997).

2.9.3 Analysis of Effects

2.9.3.1 Likely Direct Effects

Direct effects could include the inadvertent destruction of Ute ladies'-tresses plants during surface-disturbing activities and from traffic. With the implementation of the mitigation measures described in Section 1.1.9, no direct effects would occur.

2.9.3.2 Likely Indirect Effects

Indirect effects could include the temporary habitat loss due to surface disturbance. With the implementation of the mitigation measures described in Section 1.1.9, no indirect effects would occur.

2.9.4 Likely Cumulative Impacts

The proposed project would have no cumulative effects to the threatened Ute ladies'-tresses and/or their habitat because there are no past, present, or reasonably foreseeable future actions that, when combined with the proposed CH-MM and AU-CH transmission line project, would result in any impacts beyond those that already exist.

2.9.5 Mitigation Measures and Determination of Effects

No additional mitigation is proposed. The proposed CH-MM and AU-CH transmission line project would have **no effect** Ute ladies'-tresses and/or their habitat. Western has incorporated sufficient avoidance and other mitigation measures into the project that any effects to Ute ladies'-tresses would be insignificant.

2.10 COLORADO BUTTERFLYPLANT

2.10.1 Current Species Status

Colorado butterflyplant was first listed under the ESA in 2000 and is currently designated as threatened in its entire range (USFWS 2006). In addition, the USFWS designated critical habitat for the Colorado butterflyplant in southeastern Wyoming in 2005 (USFWS 2006).

2.10.2 Habitat Description

2.10.2.1 General Habitat

The Colorado butterflyplant is a perennial herb and is found in southeastern Wyoming, north-central Colorado, and extreme western Nebraska between elevations of 5,000 and 6,400 ft AMSL (USFWS 2006). This threatened plant species is a potential resident on subirrigated alluvial level or slightly sloping floodplains and drainage bottoms at elevations of 5,000 to 6,400 ft. Colonies are often found in low depressions or along bends in wide meandering stream

channels. Known populations of this species are restricted to approximately 1,700 acres of habitat in Laramie County, Wyoming; western Kimball County, Nebraska; and Weld County, Colorado, within the drainages of both the North and South Platte Rivers.

In Wyoming, a predictive distribution model was prepared for Colorado butterflyplant by the Wyoming Gap program, and, according to the predictive model, the CH-MM segment crosses approximately 13 segments of potential Colorado butterflyplant habitat (Figure 2.8).

The AU-CH segment is also located within the overall range of the Colorado butterflyplant (USFWS 2006). During the 2004 general habitat surveys conducted by TRC Mariah biologists, a single 14-acre parcel of potential Colorado butterflyplant habitat was identified within the project ROW. This area is located approximately 13 miles north of the Ault Substation (Figure 2.9). While no site-specific surveys were conducted at the time, the habitat is suitable for the presence of Colorado butterflyplant.

2.10.2.2 Critical Habitat

In accordance with a court-approved settlement agreement, the USFWS in 2005 designated 3,538 acres of final critical habitat along approximately 51 miles of stream within Platte and Laramie Counties, Wyoming, for the threatened Colorado butterflyplant. Private lands comprise 90% of the designated critical habitat, with state lands comprising the remaining 10%. The designated areas are adjacent to Tepee Ring Creek, Bear Creek, Little Bear Creek, Horse Creek, Lodgepole Creek, Diamond Creek, and Lone Tree Creek, Wyoming. Some areas in Wyoming were excluded from the final critical habitat designation because the USFWS and private landowners developed conservation agreements that will provide conservation benefits for the plant. Similarly, critical habitat in Weld County, Colorado, was excluded because the city of Fort Collins signed a conservation agreement with the USFWS.

The project would not intersect any Colorado butterflyplant critical habitat; however, it is located within approximately 200 ft of critical habitat in southeastern Wyoming (see Figure 2.8).

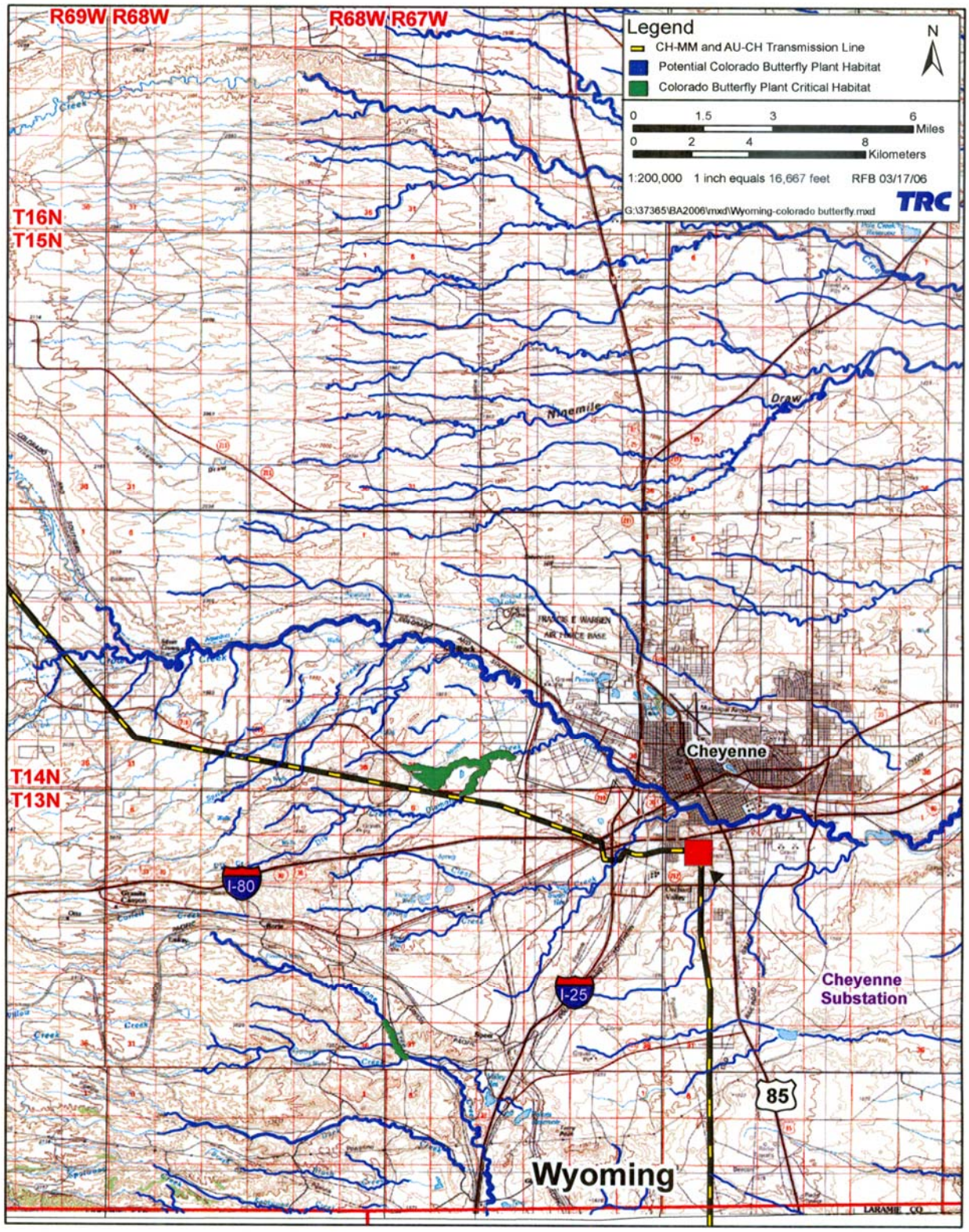

Figure 2.8 Colorado Butterflyplant Potential and Critical Habitat, CH-MM and AU-CH Transmission Line, Southeastern Wyoming and Northeastern Colorado.

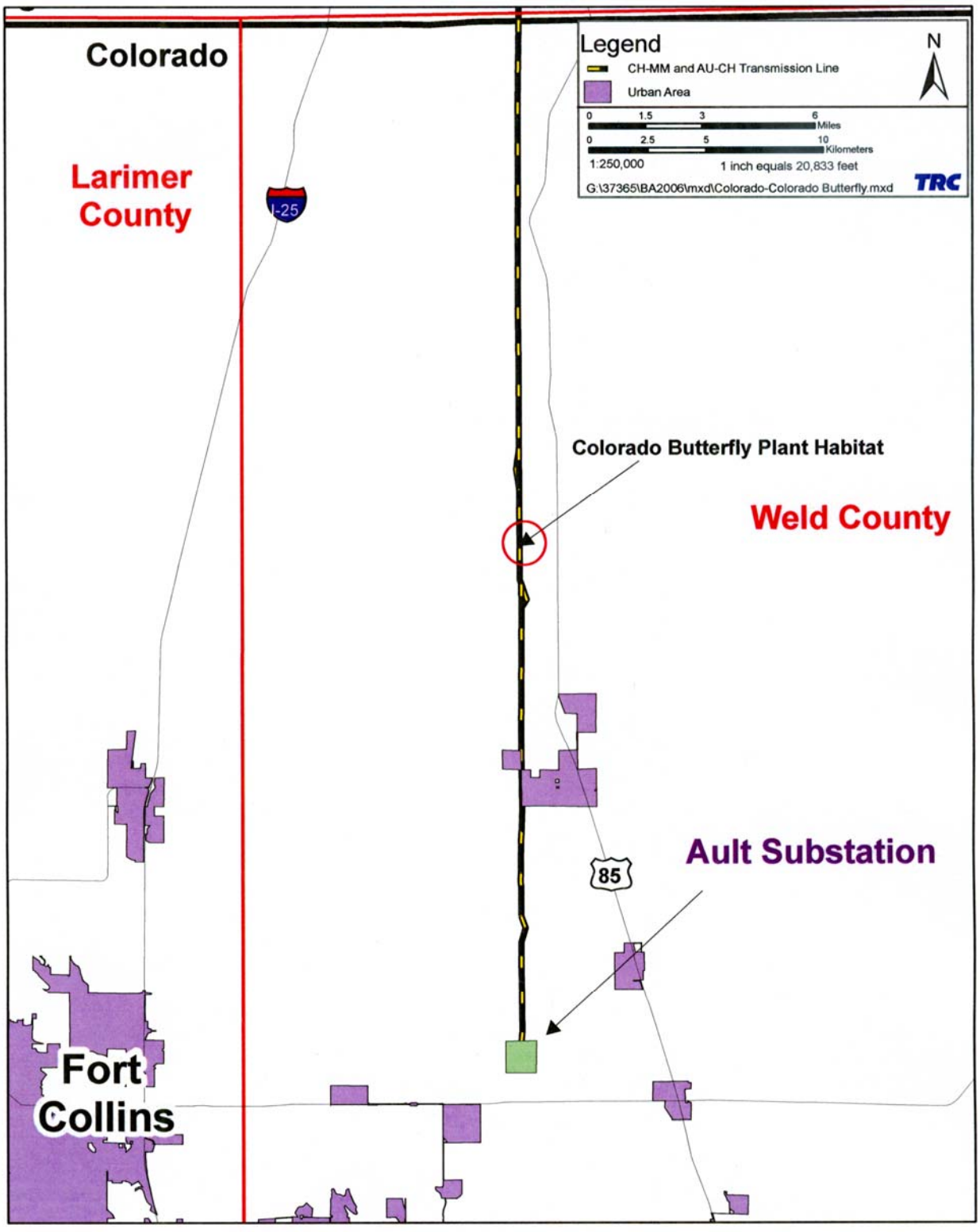

Figure 2.9 Colorado Butterflyplant Potential Habitat, Proposed AU-CH Transmission Line Segment, Northeastern Colorado.

2.10.3 Analysis of Effects

2.10.3.1 Likely Direct Effects

Direct effects could include the inadvertent destruction of Colorado butterflyplant individuals during surface-disturbing activities and from traffic. With the implementation of the mitigation measures described in Section 1.1.9, no direct effects would occur.

2.10.3.2 Likely Indirect Effects

Indirect effects could include the temporary habitat loss due to surface disturbance. The proposed project is located outside of and would not disturb any designated critical habitat for the Colorado butterflyplant. With the implementation of the mitigation measures described in Section 1.1.9, no indirect effects would occur.

2.10.4 Likely Cumulative Impacts

The proposed project would have no cumulative effects to the Colorado butterflyplant and/or their habitat because there are no past, present, or reasonably foreseeable future actions that, when combined with the proposed CH-MM and AU-CH transmission line project, would result in any impacts beyond those that already exist.

2.10.5 Mitigation Measures and Determination of Effects

No additional mitigation is proposed. The proposed CH-MM and AU-CH transmission line project would have **no effect** on the Colorado butterflyplant, its habitat, or its critical habitat. Western has incorporated sufficient avoidance and other mitigation measures into the project that any effects to Colorado butterflyplant would be insignificant.

2.11 PLATTE RIVER SPECIES

The USFWS has identified five threatened or endangered species that may occur in the downstream riverine habitats of the South Platte River in Nebraska. These species include the endangered whooping crane, endangered interior least tern, the threatened piping plover, the endangered pallid sturgeon, and the threatened western prairie fringed orchid. These species could be adversely affected by surface water depletions (consumption) from the South Platte River system as a result of project-related activities (USFWS 2005, 2006). These species (threatened or endangered) do not occur along the ROW and thus would not be directly impacted.

In 2002, the USFWS prepared a biological opinion in its *Revised Intra-Service Section 7 Consultation for Federal Agency Actions Resulting in Minor Water Depletions to the Platte River System* (USFWS 2002). The biological opinion covers any federal actions other than wetland restoration projects that result in average annual depletions of 25 acre-ft or less to the Platte River system, regardless of location within the basin. The effects analysis and conservation measures apply only to federally listed species, designated whooping crane habitat, and proposed critical habitat for the piping plover along the Platte River in Nebraska.

For the CH-MM and AU-CH project, the only water use anticipated would be for soil compaction during construction of the Snowy Range substation. Compaction water would be obtained from the Laramie municipal water, which comes from the Laramie River and the Casper formation. The amount of water to be used is currently unknown but would be less than 25 acre-feet; however, any amount of water taken from the Platte River system for use on this project would be considered a depletion and would require section 7 consultation with the USFWS. Therefore, once the amount of water is known, Western would initiate consultation with the FWS on that amount.

In accordance with the above-referenced biological opinion, “Federal agencies should continue to conclude that each action resulting in a depletion of 25 acre-feet or less per year to the Platte River system **may adversely affect** the whooping crane, interior least tern, piping plover, and/or

pallid sturgeon, designated whooping crane critical habitat, and proposed piping plover critical habitat" (USFWS 2002). No mitigation is required because the U.S. Forest Service and the USFWS have provided funds to the Fish and Wildlife Foundation account for the purposes of offsetting the adverse effects of federal agency actions resulting in minor water depletions, such as the CH-MM and AU-CH project.

2.12 MOUNTAIN PLOVER

The mountain plover is not currently listed under the ESA, and the USFWS has withdrawn the proposal to list the mountain plover under the ESA. The USFWS is no longer required to review project-related impacts to the mountain plover; however, mountain plover was included in the USFWS letter concerning the project (2006), and the USFWS continues to encourage federal agencies and their applicants to continue providing protection for this species as it remains protected under the *Migratory Bird Treaty Act*. To that end, the project ROW was surveyed for potential mountain plover habitat by TRC Mariah biologists between December 2002 and August 2004, and potential mountain plover habitat was identified along the entire CH-MM and AU-CH corridor (Figure 2.10).

With implementation of survey and avoidance mitigation measures discussed in Section 1.1.9, the proposed CH-MM and AU-CH transmission line project would have no direct, indirect, or cumulative effects on mountain plover.

2.13 GREATER SAGE-GROUSE

The USFWS has determined that the greater sage-grouse (*Centrocercus urophasianus*) is unwarranted for listing under the ESA at this time. However, the USFWS continues to have concerns regarding sage-grouse population status, trends, and threats, as well as concerns for other sagebrush-obligate species (USFWS 2006).

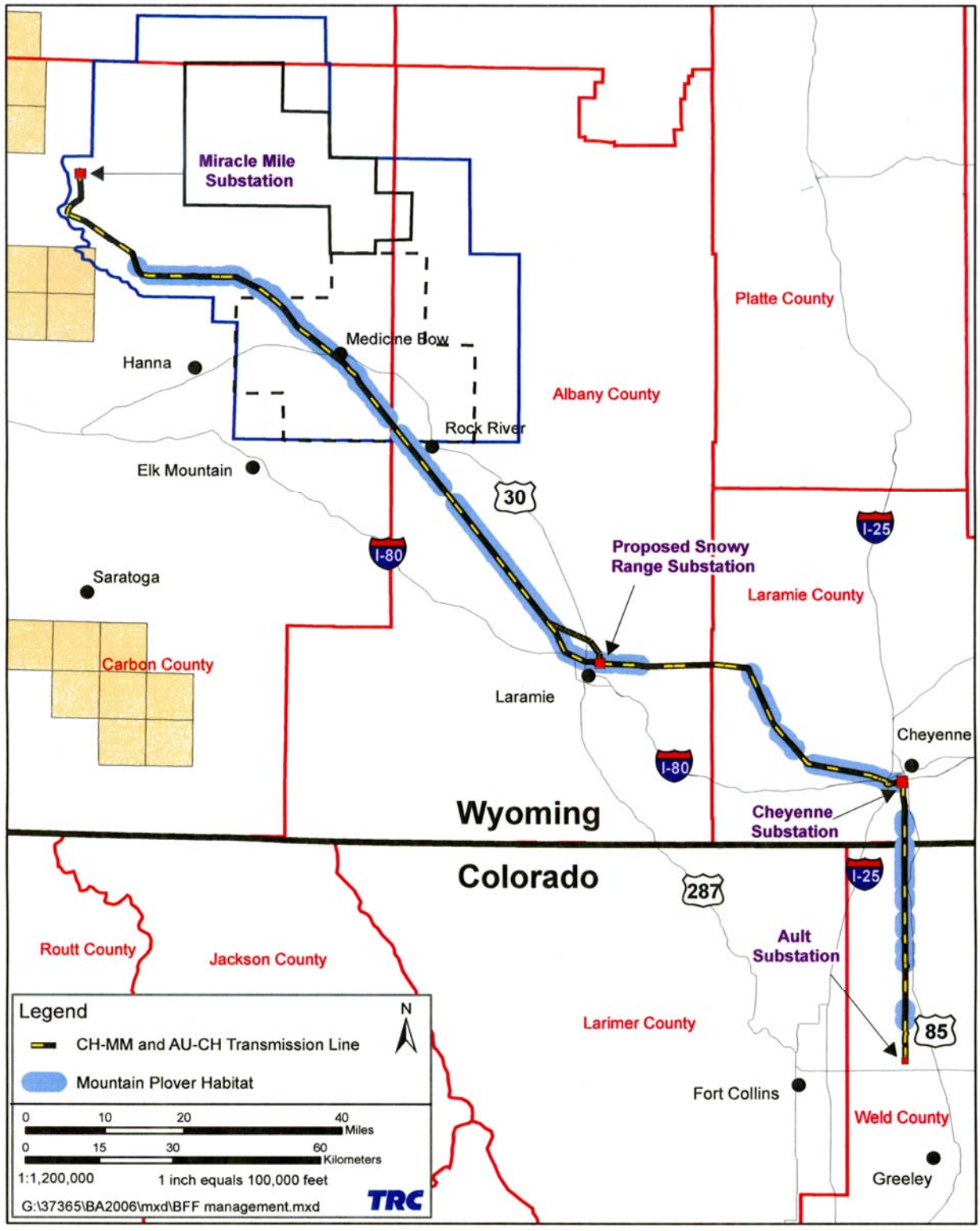

Figure 2.10 Potential Mountain Plover Habitat, Proposed CH-MM and AU-CH Transmission Line Project, Southeastern Wyoming and Northeastern Colorado.

Based on 2005 data from the WGFD, there are six greater sage-grouse leks within 2 miles of the proposed ROW in Wyoming, and all of these leks are located between the Miracle Mile Substation and the Snowy Range Substation (Figure 2.11) (WGFD 2005). According to the CDOW, there are no greater sage-grouse leks, brooding areas, or production areas within any part of Weld or Larimer Counties, Colorado (CDOW 2006).

With implementation of survey and avoidance mitigation measures discussed in Section 1.1.9, the proposed CH-MM and AU-CH transmission line project would have minimal direct, indirect, or cumulative effects on greater sage-grouse.

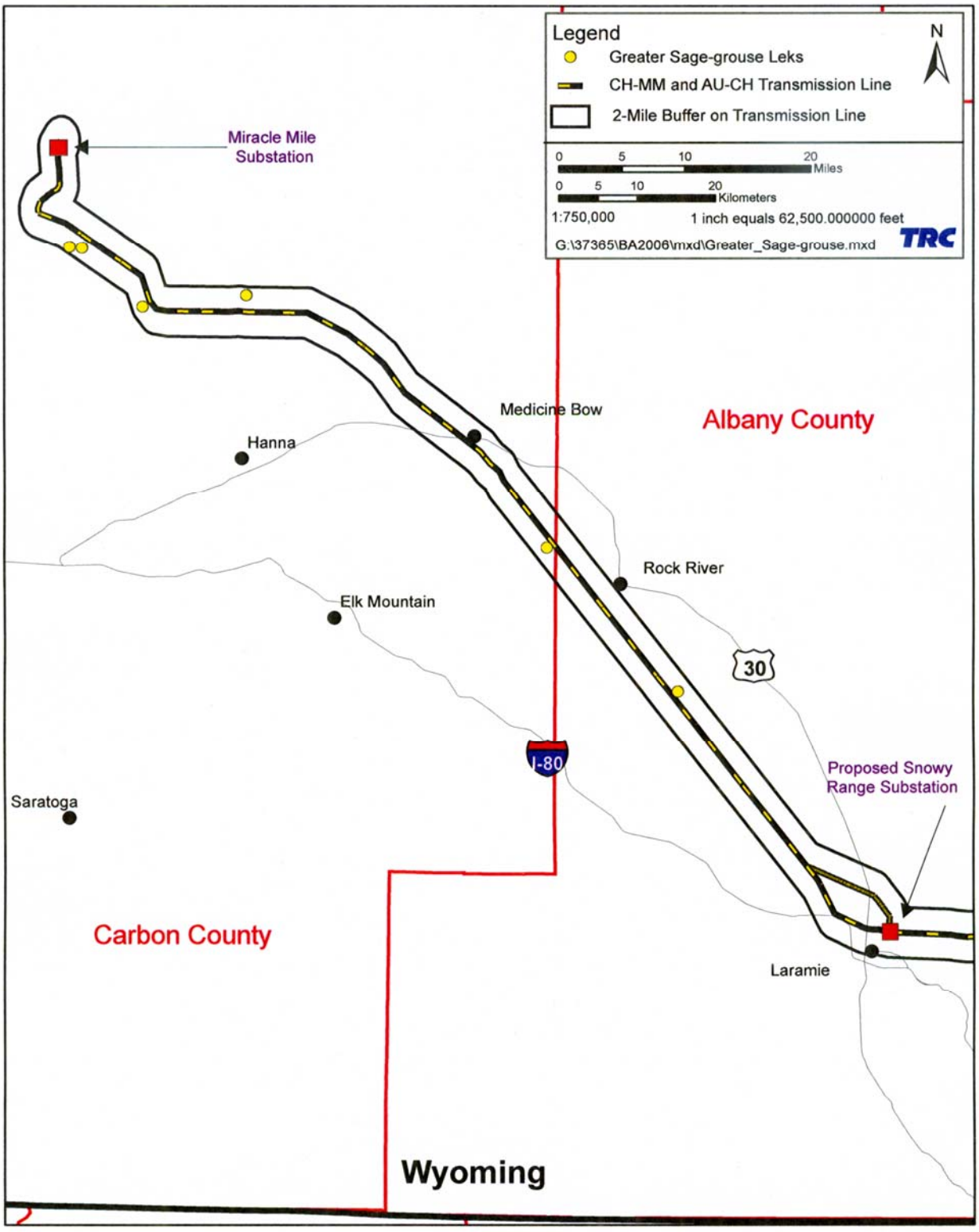

Figure 2.11 Greater Sage-grouse Leks, Proposed CH-MM Segment, Southeastern Wyoming.

3.0 CONTACTS/CONTRIBUTORS/PREPARERS

Table 3.1 lists persons contacted during the preparation of this BA, and Table 3.2 lists preparers of this BA.

Table 3.1 Persons Contacted During Preparation of the Biological Assessment.

Agency or Organization	Individual(s)	Title	Contribution
Western	Rodney Jones	Environmental Specialist	Description of Proposed Action
U.S. Fish and Wildlife Service	Kathleen Erwin	Wildlife Biologist	Species information and mitigation measures
	Mary Jennings	Wildlife Biologist	Information on Preble's meadow jumping mouse
Bureau of Land Management	Heath Kline	Wildlife Biologist	Information on bald eagles
Wyoming Game and Fish Department	Andrea Cerovski	Wildlife Biologist	Information on bald eagles
	Martin Grenier	Wildlife Biologist	Information on black-footed ferrets

Table 3.2 Persons that Contributed to the Preparation of the Biological Assessment.

Firm/Company	Name	EA Responsibility
TRC Mariah Associates Inc.	Scott Kamber	BA Preparation, Quality Control
	Karyn Coppinger	Review and Revision per Western's Comments
	Jan Hart	Data Gathering, Quality Assurance
	Randy Blake	Data Gathering, GIS Cartography
	Genial DeCastro	Document Production, Quality Control
	Tamara Linse	Document Production, Technical Editing
	Jessica Robinson	Document Production, Technical Editing

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